Annex "C"

Republic of the Philippines
Department of Education

Technical Specifications

Project Title **Mass Production, Supply, Delivery, Installation, Training and Maintenance of Science and Mathematics Equipment Packages to Public Elementary Schools for Grades 1 to 3 & Grades 4 to 6, and Public Senior High Schools for Grades 11 to 12 (CORE &**

Detailed Technical Specification

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
MASS PRODUCTION				
LOT 1: BLR-DEVELOPED BASIC SCIKIT				
1	**BLR-developed Basic Scikit: Ø 9.5mm x 250mm long Stand Rod**	Functional Specifications: used to interconnect stand base to stand supports; used for suspending pulleys, meter tapes		
		Performance Specifications: should effectively interconnect stand base-stand support systems; suspend single pulleys, meter tapes		
		Design Specifications: please see Technical Drawing (https://bit.ly/3F71Id6)		
2	**BLR-developed Basic Scikit: Ø 9.5mm x 500mm long Stand Rod**	Functional Specifications: used to interconnect stand base to stand supports in heavier setups		
		Performance Specifications: should effectively interconnect stand base-stand support systems in heavier setups		
		Design Specifications: please see Technical Drawing (https://bit.ly/3tgTMmB)		
3	**BLR-developed Basic Scikit: Ø 12.7mm x 1000mm long Stand Rod**	Functional Specifications: used as vertical support for free fall setup; horizontal support for suspending multiple pulley systems		
		Performance Specifications: should be able to support vertically free fall setup; horizontal support for suspending multiple pulley systems		
		Design Specifications: please see Technical Drawing (https://bit.ly/3F3BRCE)		
4	**BLR-developed Basic Scikit: Rail**	Functional Specifications: used as path rail for motorized and dynamics carts		
		Performance Specifications: should be able to serve as path rail for motorized and dynamics carts		
		Design Specifications: please see Technical Drawing (https://bit.ly/48GiwVA)		
5	**BLR-developed Basic Scikit: Ring with stem**	Functional Specifications: used to support glasswares in heating activities		
		Performance Specifications: should be stable in supporting glasswares		
		Design Specifications: please see Technical Drawing (https://bit.ly/3F55XFP)		
6	**BLR-developed Basic Scikit: Test Tube Rack**	Functional Specifications: used for resting racks for test tubes both for specimen viewing and storage		
		Performance Specifications: should be able to keep test tubes in placeused for resting racks for test tubes both for specimen viewing and storage		
		Design Specifications: please see Technical Drawing (https://bit.ly/48JaH1C)		
7	**BLR-developed Basic Scikit: Wire Gauze**	Functional Specifications: used to diffuse open flame in activities that involve heating		
		Performance Specifications: should be able to diffuse open flame in activities that involve heating		
		Design Specifications: please see Technical Drawing (https://bit.ly/45eOAgB)		
8	**BLR-developed SCIKIT BASIC 001: Stand Base**	Functional Specifications: used as base support of activity equipment setups		
		Performance Specifications: should be stable in supporting equipment setups		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Design Specifications: please see Technical Drawing (https://bit.ly/3F2iObY)		
9	**BLR-developed SCIKIT BASIC 001: Stand Support**	Functional Specifications: used to support stand base assembly		
		Performance Specifications: should provide sturdy support for stand base assembly		
		Design Specifications: please see Technical Drawing (https://bit.ly/46CGLlN)		
10	**BLR-developed SCIKIT BASIC 001: SCIKIT BASIC Storage Case 001 (With Cover and Base Sheathing)**	Functional Specifications: used as storage for stand bases		
		Performance Specifications: should be able to store free fall apparatus set cmponents		
		Design Specifications: please see Technical Drawing (https://bit.ly/46zIw3e)		
11	**BLR-developed SCIKIT BASIC 002: Multiclamp**	Functional Specifications: used as for interconnecting rods perpendicularly		
		Performance Specifications: should be sturdy in interconnecting rods		
		Design Specifications: please see Technical Drawing (https://bit.ly/46FhKX4)		
12	**BLR-developed SCIKIT BASIC 002: Test Tube Holder**	Functional Specifications: is used for holding heated test tubes		
		Performance Specifications: should be stable in holding heated test tubes		
		Design Specifications: please see Technical Drawing (https://bit.ly/3rDTMN6)		
13	**BLR-developed SCIKIT BASIC 002: SCIKIT BASIC Storage Case 002 (With Cover and Base Sheathing)**	Functional Specifications: Used as storage of multiclamps and test tube holders		
		Performance Specifications: should be able to store 25 pieces multiclamp and 5 pieces test tube holders		
		Design Specifications: please see Technical Drawing (https://bit.ly/45fBvmZ)		
14	**BLR-developed SCIKIT BASIC 003: Universal Clamp**	Functional Specifications: is used for securing heated beakers and flasks in place		
		Performance Specifications: should be stable in holding heated glasswares		
		Design Specifications: please see Technical Drawing (https://bit.ly/46AJwEj)		
15	**BLR-developed SCIKIT BASIC 003: Universal Bosshead**	Functional Specifications: for interconnecting rods to increase overall length as activity requirement; can also be used to perpedicularly interconnect rods for lighter loads		
		Performance Specifications: should be sturdy in interconnecting rods		
		Design Specifications: please see Technical Drawing (https://bit.ly/46BeyMm)		
16	**BLR-developed SCIKIT BASIC 003: SCIKIT BASIC Storage Case 003 (With Cover and Base Sheathing)**	Functional Specifications: used as storage for clamps and bossheads		
		Performance Specifications: should be able to store 12 pieces universal clamp and 10 universal bosshead		
		Design Specifications: please see Technical Drawing (https://bit.ly/48UPfH9)		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
17	**BLR-developed Free Fall Apparatus (Mechanics 001): Ball Case (with Cover and foam)**	Functional Specifications: used storage case for the metal balls and metal embedded plastic ball		
		Performance Specifications:		
		Design Specifications: please see Technical Drawing (https://bit.ly/3tot8sb)		
18	**BLR-developed Free Fall Apparatus (Mechanics 001): Digital Timer Assembly (Digital Stopwatch)**	Functional Specifications: used to determine time of fall of metal balls or metal embedded plastic ball in free fall activity		
		Performance Specifications: should be able to determine time of fall of metal balls or metal embedded plastic ball in free fall activity		
		Design Specifications: please see Technical Drawing (https://bit.ly/46AqYUA)		
19	**BLR-developed Free Fall Apparatus (Mechanics 001): Metertape with hooks and plastic pointer**	Functional Specifications: used to measure the height of fall of falling objects in free fall ctivity		
		Performance Specifications: should be able to measure the height of fall of falling objects in free fall ctivity		
		Design Specifications: please see Technical Drawing (https://bit.ly/46FPymT)		
20	**BLR-developed Free Fall Apparatus (Mechanics 001): Ø 12.7mm Steel Spherical Ball**	Functional Specifications: used as free fall object in free fall activity		
		Performance Specifications:		
		Design Specifications: please see Technical Drawing (https://bit.ly/45m9drh)		
21	**BLR-developed Free Fall Apparatus (Mechanics 001): Ø 25mm Plastic Spherical Ball with metal screw**	Functional Specifications: used as free fall object in free fall activity		
		Performance Specifications:		
		Design Specifications: please see Technical Drawing (https://bit.ly/48GPyFa)		
22	**BLR-developed Free Fall Apparatus (Mechanics 001): Ø 25mm Steel Spherical Ball**	Functional Specifications: used as free fall object in free fall activity		
		Performance Specifications:		
		Design Specifications: please see Technical Drawing (https://bit.ly/3rGV8qp)		
23	**BLR-developed Free Fall Apparatus (Mechanics 001): Pad Switch Assembly**	Functional Specifications: used as second switch to stop the stopwatch in free fall activity		
		Performance Specifications: should be able to stop the stopwatch in free fall activity		
		Design Specifications: please see Technical Drawing (https://bit.ly/46HJ72Z)		
24	**BLR-developed Free Fall Apparatus (Mechanics 001): Solenoid Assembly**	Functional Specifications: used as electromagnet to temporarily suspend the metal balls or the metal imbedded plastic ball in free fall activity		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: should be able to provide electromagnetism to temporarily suspend the metal balls or the metal imbedded plastic ball in free fall activity		
		Design Specifications: please see Technical Drawing (https://bit.ly/48EUpGZ)		
25	**BLR-developed Free Fall Apparatus (Mechanics 001): Synchro Box Assembly**	Functional Specifications: used to simultaneously start the stopwatch and cut-off current to the solenoid		
		Performance Specifications: should be able to simultaneously start the stopwatch and cut-off current to the solenoid		
		Design Specifications: please see Technical Drawing (https://bit.ly/48JfNL0)		
26	**BLR-developed Free Fall Apparatus (Mechanics 001): SCIKIT MECHANICS Storage Case 001 (With Cover and Base Sheathing)**	Functional Specifications: used as storage case for free fall apparatus set		
		Performance Specifications:		
		Design Specifications: please see Technical Drawing (https://bit.ly/48JaHyE)		
27	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Cart-spring loaded**	Functional Specifications: used as source of action force in Newton's 3rd law of Motion Experiment		
		Performance Specifications: should be able to provide action force in Newton's 3rd law of Motion Experiment		
		Design Specifications: please see Technical Drawing (https://bit.ly/48GisVQ)		
28	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Cart-with counterweight**	Functional Specifications: used as source of reaction force in Newton's 3rd law of Motion Experiment		
		Performance Specifications: should be able to provide reaction force in Newton's 3rd law of Motion Experiment		
		Design Specifications: please see Technical Drawing (https://bit.ly/3F4xZkL)		
29	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Cylindrical Mass, 50-gram**	Functional Specifications: used for loading into each dynamics cart for newton's 2nd Law of Motion exoeriment		
		Performance Specifications: should be able to load into each dynamics cart for newton's 2nd Law of Motion exoeriment		
		Design Specifications: please see Technical Drawing (https://bit.ly/45ejs0A)		
30	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Driving Mass, 3-gram**	Functional Specifications: use to provide the 'net' force in newton's 2nd Law of Motion experiment		
		Performance Specifications: should be able to provide the 'net' force in newton's 2nd Law of Motion experiment		
		Design Specifications: please see Technical Drawing (https://bit.ly/46BizjD)		
31	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Leveling Pad Assembly**	Functional Specifications: used as bottom support of rails		
		Performance Specifications: should be able to support rails		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Design Specifications: please see Technical Drawing (https://bit.ly/46EUt7A)		
32	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Plastic Hammer**	Functional Specifications: used to strike the push rod to release spring in spring-loaded dynamics cart		
		Design Specifications: please see Technical Drawing (https://bit.ly/46xRRIE)		
		Performance Specifications: sholud be able to make push rod release spring in spring-loaded dynamics cart		
33	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Modelling Clay, 1 bar/set**	Functional Specifications: used as storage case for dynamics carts and accessories set		
		Performance Specifications:		
		Design Specifications: 1. Any color 2. Minimum weight: 150 gram bar, individually packed 3. Non drying, non hardening type 4. Brand must be permanently marked in its packaging.		
34	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): Stopper-Fork Assembly**	Functional Specifications: used as low inertia string guide in Newton's 2nd Law of Motion Experiment		
		Performance Specifications: should be able to provide low inertia string guide in Newton's 2nd Law of Motion Experiment		
		Design Specifications: please see Technical Drawing (https://bit.ly/3F6mFVf)		
35	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): String (thin), 1 ball/set**	Functional Specifications: used to transmit net force from weight of 3-gram driving massess to pull dynamics carts along rail		
		Performance Specifications: should be able to transmit net force from weight of 3-gram driving massess to pull dynamics carts along rail		
		Design Specifications: 1. Ball of cotton string, crochet size 8 thread type 2. Ball is 50 grams 3. Any color		
36	**BLR-developed Dynamics Carts-Rail System (Mechanics 002): SCIKIT MECHANICS Storage Case 002 (With Cover and Base Sheathing)**	Functional Specifications: used as storage case for Dynamics Carts-Rail System (Mechanics 002) and accessories		
		Performance Specifications: must store the items for Dynamics Carts-Rail System Set		
		Design Specifications: please see Technical Drawing (https://bit.ly/48z9zNQ)		
37	**BLR-developed SCIKIT MECHANICS 003: 10-Newton Spring Balance**	Functional Specifications: used to measure forces with magnitudes equivalent up to the weight of 1 kilogram mass		
		Performance Specifications: should be able to measure forces with magnitudes equivalent up to the weight of 1 kilogram mass		
		Design Specifications: please see Technical Drawing (https://bit.ly/48HhCbl)		
38	**BLR-developed SCIKIT MECHANICS 003: Friction Block and Friction Board**	Functional Specifications: Used to validate factors affecting friction force		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Must be able to validate factors affecting friction force		
		Design Specifications: please see Technical Drawing (https://bit.ly/45kLRCh)		
39	**BLR-developed SCIKIT MECHANICS 003: Leveling Hose**	Functional Specifications: used to check horizontal levelness of surfaces where the rail will be placed		
		Performance Specifications: should be able to check horizontal levelness of surfaces where the rail will be placed		
		Design Specifications: please see Technical Drawing (https://bit.ly/45fBv6t)		
40	**BLR-developed: User's Manual (SCIKIT MECHANICS)**	Functional Specifications: used as reference guide on assembly of mechanics items		
		Performance Specifications:		
		Design Specifications: please see MECHANICS Manual (https://bit.ly/48KI2sP)		
		See Cover and Inside Pages Specifications		
41	**BLR-developed: Experiment Module (SCIKIT MECHANICS)**	Functional Specifications: used as guides to perform mechanics activities		
		Performance Specifications:		
		Design Specifications: please see EXPERIMENT MODULES (https://bit.ly/3F5Hy2Z)		
		See Cover and Inside Pages Specifications		
LOT 2: BLR-developed SCIENCE AND MATHEMATICS EQUIPMENT (Elem, JHS, & SHS)				
1	**BLR-developed Blackboard Compass**	Functional Specifications: used to aid teacher in constructing/drawing circles on board		
		Performance Specifications: should be able to draw visible/large circles on board		
		Design Specifications: please see Technical Drawing (https://bit.ly/3RLhhhW)		
2	**BLR-developed Blackboard Protractor**	Functional Specifications: used to aid teacher in constructing/drawing angles, arcs, and circles on board		
		Performance Specifications: should be able to draw visible/large angles, arcs, and circles on board		
		Design Specifications: please see Technical Drawing (https://bit.ly/48B02pH)		
3	**BLR-developed Heat Conductivity Apparatus**	Functional Specifications: Used to demonstrate the different thermal (heat) conductivities of five (5) different metals		
		Performance Specifications: must be able to demonstrate the different thermal (heat) conductivities of five (5) different metals, with copper as the first metal, followed by aluminum, brass, mild steel and stainless steel.		
		Design Specifications: please see Technical Drawing (https://bit.ly/3Q7R1NH)		
4	**BLR-developed Light Source (Single Slit)**	Functional Specifications: Used to produced a defined beam of light		
		Performance Specifications: Must be able to produced a defined beam of light		
		Design Specifications: please see Technical Drawing (https://bit.ly/3ry9ycz)		
5	**BLR-developed Set of Coils (Transformer)**	Functional Specifications: used to demonstrate transformer principle		
		Performance Specifications: should be able to demonstrate transformer principle		
		Design Specifications: please see Technical Drawing (https://bit.ly/3Q3w2vo)		
6	**BLR-developed Variable Power Supply with 5 pcs. Terminal Board**	Functional Specifications: used to provide variable AC and DC voltages for student group work		
		Performance Specifications: should be able to provide variable AC and DC voltages for student group work		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Design Specifications: please see Technical Drawing (https://bit.ly/3ZQDWeU)		
7	**BLR-developed Fresh Water Aquarium with Stand**	Functional Specifications: Used to keep aquatic plants and animals		
		Performance Specifications: Must be able to demonstrate interaction among plants and animals in a marine-like environment.		
		Design Specifications: please see Technical Drawing (https://bit.ly/3rH4wdI)		
8	**BLR-developed: Fraction Set**	Functional Specifications: used to demonstrate part-to-whole concept using shapes		
		Performance Specifications: must be able to demonstrate fraction as a concept using whole and fractional part of a circle and square		
		Design Specifications: please see Technical Drawing (https://bit.ly/3ZNM7sb)		
9	**BLR-developed: Linear Pair/Angle Demonstrator**	Functional Specifications: used to demonstrate kinds of angles and some angle relationship		
		Performance Specifications: must be able to demonstrate acute, obtuse, and right angle and deduct the said angles' definitions		
		Design Specifications: please see Technical Drawing (https://bit.ly/3RJeZjt)		
10	**BLR-developed: Number Blocks**	Functional Specifications: used in number recognition and fundamental operation		
		Performance Specifications: must be sturdy when thrown and show specific number and/or operation; be able to perform like dice		
		Design Specifications: please see Technical Drawing (https://bit.ly/48B05Sp)		
11	**BLR-developed: Place Value Chart with decimal pockets**	Functional Specifications: used to visualize whole and decimal numbers' place value		
		Performance Specifications: must be able to hold number cards and some base ten blocks		
		Design Specifications: please see Technical Drawing (https://bit.ly/48EU6Ml)		
LOT 3: BLR-DEVELOPED STORAGE CABINETS				
1	**BLR-developed Storage Cabinet**	Functional Specifications: Used for storage of science and mathematics equipment		
		Performance Specifications:		
		Design Specifications: please see Technical Drawing (https://bit.ly/45nazBX)		
MARKET ITEMS				
LOT 4: CHEMICALS				
1	**Benedict's Solution, 100 mL/bottle**	Functional Specifications: Used to test for levels/ traces of simple reducing sugars		
		Performance Specifications: Must be able to test for the presence (levels of traces) of reducing sugars such as glucose.		
		A positive test with Benedict's reagent is shown by a color change from clear blue to:		
		a) blue solution - 0 g % (no trace of simple reducing sugar)		
		b) green precipitate- 0.5 to 1.0 g % (traces of simple reducing sugar)		
		c) yellow precipitate- 1.0-1.5 g % (low simple reducing sugar)		
		d) orange precipitate - 1.5 to 2.0 g % (moderate simple reducing sugar)		
		e) brick-red precipitate - greater than 2.0 g % (high presence of simple reducing sugar)		
		Design Specifications:		
		1. Features an aqua blue liquid		
		2. Chemical Formula: $CuSO_4 \cdot 5H_2O + Na_2CO_3 + Na_2C_6H_5O_7$		
		3. Capacity: 100 mL		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5. Properly labeled with full chemical name, chemical formula, the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. Comes with a brand printed permanently on the product label		
		10. Must be brand new		
2	**Boric Acid, 100 grams/bottle**	Functional Specifications: Used as a substrate in Flame test to visually identify boron or its specific unknown metalloid ion based on the characteristic color it emits on the Bunsen flame.		
		Performance Specifications: Must be used as a substrate in Flame test to visually identify boron, or its ion based on the characteristic color it emits on the Bunsen flame. Boric acid emits a bright green color which indicates the presence of boron or its ion		
		Design Specifications:		
		1. Features a colorless or white, odorless and crystalline solid		
		2. Chemical formula : H3BO3		
		3. Mass/bottle : 100 g		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula, the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS(Safety Data Sheet)		
		9. Comes with a brand printed permanently on the product label		
		10. Must be brand new		
		Performance Specifications: Must be able to show the effect of changes in abiotic factors on the ecosystem.		
		Design Specifications:		
		1. Color: Dark Blue/blue-black		
		2. Concentration range : 0.01% - 0.04% aqueous solution (as indicated in the product label)		
		3. Capacity: 100 mL		
		4. With Safety Data Sheet		
		5. The chemical must be in original plastic packing with threaded chemical seal pack bottle.		
		6. Properly labeled with the chemical name, concentration, name of the manufacturer, manufacturing and expiry dates. Expiration shall be at least two years.		
		7. Must be branded and brand new. The brand shall be printed on the product label.		
3	**Calcium Chloride, 100 grams / bottle**	Functional Specifications: Used as a substrate in Flame test to visually identify calcium or its ion based on the characteristic color it emits on the Bunsen flame.		
		Performance Specifications: Used as a substrate in Flame test to visually identify calcium element, or an unknown metalloid ion based on the characteristic color the chemical emits on the Bunsen flame. Calcium chloride emits an orange red/yellowish red color which indicates the presence of the calcium ion		
		Design Specifications:		
		1. Features a white powder, crystals or granules		
		2. Chemical Formula : CaCl2		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		3. Mass per bottle : 100 grams		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula, the name and address of the manufacturer and with appropriate hazard warning.		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and with SDS (Safety Data Sheet)		
		9. With brand printed permanently on the product label		
		10. Must be brand new		
4	**Copper Sulfate, CuSO4, 100 grams/bottle**	Functional Specifications: Used as : a) an oxidizing agent or oxidant and is reduced in a spontaneous [chemical (redox) reaction decreasing its oxidation state with metals above it, like zinc, in the Activity Series of Metals]		
		b) a substrate in Flame test to visually identify copper or its ion based on the characteristic color it emits on the Bunsen flame .		
		Performance Specifications: Must be able to		
		a) oxidize the other reactant of a spontaneous redox reaction by gaining electrons reducing its oxidation state with metals above it, like zinc, in the Activity Series of Metals, resulting in copper in the free state and the salt of the metal being displaced.		
		b) a substrate in Flame test to visually identify copper or its ion based on the characteristic color it emits on the Bunsen flame. Copper sulfate emits blue green color on the Bunsen flame.		
		Design Specifications:		
		1. Features a blue, odorless crystalline solid		
		2. Chemical formula : CuSO4		
		3. Mass per bottle : 100 g		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula, the name and address of the manufacturer and with appropriate hazard warning.		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. With brand printed permanently on the product label		
		10. Must be brand new		
		Performance Specifications: Must be able to enhance animal cell image as to presence or absence of some organelles.		
		Design Specifications:		
		1. Capacity : 100 mL per bottle		
		2. Color: Blue-violet/dark purple		
		3. With Safety Data Sheet		
		4. The chemical must be in original plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with chemical name, name of the manufacturer, manufacturing and expiry dates. Expiration shall be at least two years.		
		6. Must be branded and brand new. The brand shall be printed on the product label.		
		Performance Specifications: Must be able to enhance plant cells as to presence or absence of some organelles.		
		Design Specifications:		
		1. Capacity: 100 mL per bottle		
		2. Color: Light orange-brown		
		3. With Safety Data Sheet		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5. The chemical must be in original plastic packing with threaded chemical seal pack bottle.		
		6. Properly labeled with chemical name, name of the manufacturer, manufacturing and expiry dates. Expiration shall be at least two years.		
		7. Must be branded and brand new. The brand shall be printed on the product label.		
5	**Magnesium Ribbon, 25 grams, 1 roll**	Functional Specifications: Used as a reactant and is ignited over a flame to demonstrate a highly exothermic combustion reaction		
		Performance Specifications: Must be able to produce a highly exothermic combustion reaction resulting in a blinding white light and intense heat when ignited over a flame. A white powdery solid, magnesium oxide is produced		
		Design Specifications:		
		1. Features a relatively soft, lightweight solid metal		
		2. Color : Shiny silvery gray--white		
		3. Chemical formula : Mg		
		4. Form : Solid (ribbon)		
		5. Mass per roll : 25-27 g		
		6. Number of roll : 1 roll		
		7. Comes in original plastic packing		
		8. Properly labeled with full chemical name, chemical formula, the name and address of the manufacturer and with appropriate hazard warning.		
		9. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		10. Expiration dates should be at least two years		
		11. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		12. Comes with a brand printed permanently on the product label		
		13. Must be brand new		
6	**Manganese Dioxide, 50 grams / bottle**	Functional Specifications: Used as a catalyst to demonstrate decomposition reaction of hydrogen peroxide and observe its effect on the rate of chemical reaction		
		Performance Specifications: Must be used as a catalyst and to undergo a spontaneous chemical reaction in the decomposition of hydrogen peroxide to produce bubbles of oxygen gas and water and to demonstrate its effect on the rate of chemical reaction		
		Design Specifications:		
		1. Form: Solid powder		
		2. Color : Brown-black solid/ blackish or brown solid		
		3. Chemical formula : MnO_2		
		4. Mass per bottle : 50 g		
		5.Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		6. Properly labeled with full chemical name, chemical formula, the name and address of the manufacturer and with appropriate hazard warning.		
		7. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		8. Expiration dates should be at least two years		
		9. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		10. Comes with a brand printed permanently on the product label		
		11. Must be brand new		
		Performance Specifications: Must be able to give a clear and very distinct image of the specimen.		
		Design Specifications:		
		1. Capacity: 100 mL/bottle		
		2. Non-drying, clear and transparent		
		3. With Refractive index range: 1.515 - 1.518 (as indicated in SDS, product label or certificate)		
		4. With Safety Data Sheet		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5. The chemical must be in original plastic packing with threaded chemical seal pack bottle.		
		6. Properly labeled with chemical name, name of the manufacturer, manufacturing and expiry date. Expiration shall be at least two years.		
		7. Must be branded and brand new. The brand shall be printed on the product label.		
7	**Phenolphthalein, 100 grams/bottle**	Functional Specifications: Used as an indicator to effect a color change to distinguish an acid from a base and in perforing acid base titration		
		Performance Specifications: Must be used as an indicator to distinguish and acid from a base and in performing acidbase titration, as it indicates the change in pH by changing its color , the results vary:		
		a) For a base, it gives a pink color		
		b) For an acid, it is colorless		
		Design Specifications:		
		1. Features a white to cream, odorless solid powder		
		2. Chemical formula : C20H14O4		
		3. Mass per bottle : 100 g		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula,the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7.Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. Comes with a brand printed permanently on the product label		
		10. Must be brand new		
8	**Potassium Chloride, 100 grams / bottle**	Functional Specifications: Used as a substrate in Flame test to visually identify a specific element or an unknown metalloid ion based on the characteristic color it emits on the Bunsen flame.		
		Performance Specifications: Must be used as :		
		a) a substrate in Flame test to visually identify potassium element, or its ion based on the characteristic color it emits on the Bunsen flame.		
		Potassium chloride emits a light lilac color which indicates the presence of the potassium ion		
		b) as a catalyst and to undergo a spontaneous chemical reaction in the decomposition of hydrogen peroxide to produce bubbles of oxygen gas and water to demonstrate the effect of catalyst on the rate of chemical reaction		
		Design Specifications:		
		1. Features a white crystalline solid		
		2. Chemical formula : KCl		
		3. Mass per bottle: 100 g		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula,the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. Comes with a brand printed permanently on the product label		
		10. Must be brand new		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
9	**Potassium Iodide, 100 grams / bottle**	Functional Specifications: Used as : a) a substrate in Flame test to visually identify potassium or its ion based on the characteristic color it emits on the Bunsen flame		
		b) a catalyst to demonstrate decomposition reaction of hydrogen peroxide to form water and oxygen		
		Performance Specifications: Must be : a) used as a substrate in Flame test to visually identify potassium , or its ion based on the characteristic color the chemical emits on the Bunsen flame. Potassium iodide emits a lilac color which indicates the presence of the potassium ion		
		b) able to undergo a spontaneous decomposition of hydrogen peroxide into bubbles of oxygen gas and water		
		Design Specifications:		
		1. Features white granules and crystals solid		
		2. Chemical formula: KI		
		3. Mass per bottle: 100 g		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula,the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. Comes with a brand printed permanently on the product label		
		10. Must be brand new		
10	**Sodium Hydroxide (Lye), 250 grams/bottle**	Functional Specifications: Used :		
		a) to differentiate an acid from a base		
		b) as a titrant added from a base burette in acid base titration		
		Performance Specifications: a) Must turn pink when added with drop/s of phenolphthalein and be able to neutralize an acid to form salt and water		
		b) In acid-base titration, the sodium hydroxide is used as a titrant added from an base buret to a known quantity of the analyte (the unknown solution) until the reaction is complete. Knowing the volume of titrant added allows the determination of the concentration of the unknownusing the formula : Na=NbVb/Va		
		c) pH value : pH 13-14		
		Design Specifications:		
		1. Features a white semi-transparent odorless hygroscopic solid		
		2. Chemical formula : NaOH		
		3. Mass per bottle : 250 grams		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula,the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. Comes with a brand printed permanently on the product label		
		10. Must be brand new		
11	**Zinc Chloride, 100 grams / bottle**	Functional Specifications: Used as a substrate in Flame test to visually identify zinc or its ion based on the characteristic color it emits on the Bunsen flame.		
		Performance Specifications: Must be used as a substrate in Flame test to visually identify zinc element or its ion based on the characteristic color it emits on the Bunsen flame. Zinc chloride emits a blue green to pale green/colorless color which indicates the presence of the zinc ion		
		Design Specifications:		
		1. Features a white crystalline/granular solid powder		
		2. Chemical Formula : ZnCl2		
		3. Mass per plastic bottle: 100 grams		
		4. Comes in original screw type plastic packing with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula,the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. Comes with a brand marked permanently on the product label		
		10. Must be brand new		
12	**Zinc metal, pellets/mossy, 100 grams / bottle**	Functional Specifications: Used as a reducing agent to reduce the other reactant of a single displacement (redox reaction) with metals above it in the Activity Series of Metals		
		Performance Specifications: Must be able to reduce the other reactant of a single displacement (redox) reaction with metals above it in the Activity Series of Metals, , like zinc, to produce salt and the displaced metal in its free state		
		Design Specifications:		
		1. Features a bluish white, or as a grey powder/pellets/mossy solid		
		2. Chemical Formula : Zn		
		3. Mass per plastic bottle : 100 grams		
		4. Comes in original screw type plastic packing, with threaded chemical seal pack bottle.		
		5. Properly labeled with full chemical name, chemical formula,the name and address of the manufacturer and with appropriate hazard warning		
		6. With manufacturing and expiry date, chemical assay, and other useful information regarding the product.		
		7. Expiration dates should be at least two years		
		8. Accompanied with Certificate of Analysis and SDS (Safety Data Sheet)		
		9. Comes with a brand printed permanently on the product label		
		10. Must be brand new		
LOT 5: GLASSWARES AND LAB TOOLS				
1	**Beaker, borosilicate, 250 mL**	Functional Specifications: Used to contain/hold/prepare solids and liquids during chemical reaction and to heat them over a Bunsen burner's flame up to more than 100°C for normal, standard use service		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Must be able to contain/hold /prepare solids and liquids during chemical reaction and heats them over a Bunsen burner's flame up to more than 100°C for normal, standard use service		
		Design Specifications:		
		1. Features a cylindrical container with straight sides, a flat bottom, with a beaded rim and with a small spout (or "beak") to aid in pouring.		
		2. Material: Borosilicate, clear, smooth, and transparent bubble-free glass with the following dimensions:		
		Outside diameter: 68-70mm		
		Height: 90-92 mm		
		Thickness: 1.5 mm to 2.0 mm		
		3. Type: Griffin, low form		
		4. Features an easy-pour spout		
		5. With permanent colored graduations of approximate volumes, large colored easy to read block letters, numbers and inscriptions/markings enamelled onto the glass, which includes the following:		
		a) Capacity: 250 mL		
		b) Manufacturer's name or trademark		
		c) With large white marking spot		
		d) With double graduated metric scale		
		d1) With marking graduation to fill: starts at 25 mL in 25mL increments		
		d2) With marking graduation to empty: starts at 0 mL in 200 mL increments		
		d3) Graduation interval: 25 mL		
		d4) Graduation range: 25 mL to 250 mL		
		6. Must be able to stand solidly/is stable when placed on a level surface		
		7. Must be free from breakage, cracks, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		8. Must be able to withstand heating of water up to 150 deg C		
		9Wrapped in paper, enclosed in bubble wrap and packed individually in a compartmentalized box		
		10. Comes with a brand enamelled permanently onto the glass		
		11. Must be brand new		
2	**Beaker, borosilicate, 50 mL**	Functional Specifications: Used to contain/hold/prepare solids and liquids during chemical reaction and to heat them over a Bunsen burner's flame up to more than 100 °C		
		Performance Specifications: Must be able to contain/hold /prepare solids and liquids during chemical reaction and heats them over a Bunsen burner's flame up to more than 100 °C		
		Design Specifications:		
		1. Features a cylindrical container with straight sides, a flat bottom with a beaded rim and a small spout (or "beak") to aid in pouring		
		2. Material: Borosilicate, clear, smooth, and transparent bubble-free glass with the following dimensions:		
		Outer diameter: 40-42 mm		
		Height: 55-57 mm		
		Thickness: 1.5 to 2.0 mm		
		3. Type: Griffin, low form		
		4. Features an easy-pour spout		
		5. With permanent colored graduations of approximate volumes, large colored easy to read block letters, numbers and inscriptions/ markings enamelled onto the glass, which includes the following:		
		a) Capacity: 50 mL		
		b) Manufacturer's name or trademark		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		c) With large white marking spot		
		d) With single graduated metric scale		
		d1)With marking graduation to fill: starts at 10 mL in 10 mL increments		
		d2) Graduation interval: 10 mL		
		d3) Graduation range: 10 mL to 50 mL		
		6. Must be able to stand solidly/is stable when placed on a level surface		
		7. Must be free from breakage, cracks, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		8. Must be able to withstand heating up water up to 150°C		
		9. Wrapped in paper, enclosed in bubble wrap and packed individually in compartmentalized box.		
		10. Comes with a brand enamelled permanently onto the glass		
		11. Must be brand new		
3	**Burette, 10 mL capacity (acid)**	Functional Specifications: Used to hold/contain the acid up to 10 mL capacity as a titrant to be delivered/ dispensed to titrate the base in acid-base titration to determine unknown concentration of base		
		Performance Specifications: Must hold/contain the acid up to 10 mL capacity as a titrant to be delivered/ dispensed to titrate the base (with color change from pink to colorless when end point is reached) in acid-base titration to determine unknown concentration of base		
		Design Specifications:		
		1. Features a long,vertical cylindrical glass tube with a volumetric graduation on its full length,with a leak-free plastic stopcock at its lower end and a tapered capillary tube at the stopcock's outlet.		
		2. Material : Clear, transparent, smooth, bubble-free high quality borosilicate glass, with the following dimensions:		
		Length of burette: 510-620 mm		
		3. Fitted with grease-free interchangeable with 1.5 to 2 mm bore plastic leak-free stopcock plug. Material of of stopcock :PTFE key		
		4. With permanent, durable colored markings in fine, clear, continuous, sharp, of uniform width, distinct colored graduation lines of approximate volumes, clearly legible and indelible block letters, inscriptions/ markings under normal conditions of use of the burettes, and large, easy-to-read numbers every 0.5 mL enamelled permanently onto the glass before the first graduation line which includes the following:		
		a) Manufacturer's name or trademark		
		b) Capacity: 10 mL		
		c) Sub. Div. : 0.05 ml		
		d)Tolerance: ± 0.02-±0.03 mL		
		e) Class: A		
		f) Unit of volume: mL		
		g) Ex		
		h) Reference Temp: 20°C-27°C		
		5. With Statement of Accuracy /Certificate of Accuracy) latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		6. Marked with an individual serial number (Serially Numbered)		
		7. Individually placed in bubble wrap, enclosed in a polystyrene and packed in a padded sturdy box.		
		8. Must be free from breakage, leaks, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein.		
		9. Includes Operations Manual in English,		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		10. With Activity Sheets/Teacher's Manual in English		
		11. Comes with a brand enamelled permanently onto the glass		
		12. Must be brand new		
4	**Burette, 10 mL capacity (base)**	Functional Specifications: Used to hold/contain the base as a titrant to be delivered/ dispensed to tirate an acid up to 10 mL capacity in acid-base titration to determine unknown concentration of acid		
		Performance Specifications: Must hold/contain the base as a titrant to be delivered/ dispensed to titrate an acid up to 10 mL capacity (with color change from colorless to very faint pink when end point is reached) in acid-base titration to determine unknown concentration of acid		
		Design Specifications:		
		1. Features a long, graduated glass tube, with a leakage-free stopcock at its lower end and a tapered capillary tube at the screw type stopcock's outlet.		
		2. Material : Clear, transparent, bubble-free, smooth borosilicate glass, with the following dimensions:		
		a) Length of burette: 444.5-520 mm		
		3. With PTFE (screw-thread type/needle valve-Rotaflow leak-proof plastic) stopcock		
		4. With permanent, durable colored markings in fine, clear, continuous, sharp, of uniform width, distinct colored graduation lines of approximate volumes, clearly legible and indelible block letters and inscriptions with large, easy-to-read numbers every 0.5-1.0 mL subdivisions enamelled permanently onto the glass, before the first graduation line, which includes the following:		
		a) Manufacturer's name or trademark		
		b) Capacity: 10 mL		
		c) Sub. Div. : 0.05 ml		
		d) Tolerance: 0.05 mL		
		d) Class: B		
		e) Unit of volume: mL		
		f) Ex		
		g) Reference Temp: 20°C-27°C		
		5. With machine Jet flow control which is made from thick walled capillary tubing which forms an integral part of the burette shall have no cavity at the join likely to trap air bubbles.		
		6. With Statement of Accuracy /Certificate of Accuracy) latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		7. Marked with an individual serial number (Serially Numbered).		
		8. Individually placed in bubble wrap, enclosed in polystyrene and packed in a padded sturdy box		
		10. Must be free from breakage, leaks, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein.		
		11. Includes Operations Manual in English,		
		12. With Activity Sheets/Teacher's Manual in English		
		13. Comes with a brand enamelled permanently onto the glass		
		14. Must be brand new		
5	**Burner, Alcohol, glass, 150 mL Capacity**	Functional Specifications: Used to produce hot, consistent open flame for slow/gentle heating of glasswares and substances		
		Performance Specifications: Must be able to produce hot, consistent open flame a)for slow/gentle heating of glasswares and substances		
		b)can withstand prolonged heating without breaking		
		c) visually determine the identity of an unknown metal or metalloid ion based on the characteristic color the chemical/salt emits on the Bunsen flame to investigate reactions of ions and apply these in qualitative analysis through an activity, on Flame Test		
		d) bend a glass tubing		
		e) heat,to sterilize, to accelerate, and to trigger chemical reactions,		
		f) for combustion purposes and techniques		
		Design Specifications:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		1. Features a globe-shaped body and flat base (bottom) with threaded mouth		
		2. Materia l : Sturdy, heavy walled, clear, transparent, smooth, bubble-free glass,		
		3. Capacity : 150 mL		
		4. With rust/corrosive-free wick holder permanently attached to a threaded base		
		a) Material of wick holder and cover/caps : Nickel- plated brass		
		b) Type of wick holder : Threaded		
		5. With one (1) pc cotton fiber/strand braided wick perfectly fitted to the wick tube		
		a) Material of wick : Cotton fiber/strand		
		b)Type of wick: Well-braided		
		c)Length of wick : 178-1809 mm		
		d)Diameter : 5-6 mm		
		6. With shiny, smooth, and corrosion-free metal snuff/snap-on cover/cap		
		7 With ten (10) pc replacement well-braided cotton fiber/strand wicks		
		8. Wrapped in paper, enclosed in bubble wrap and packed in a compartmentalized box		
		9. Must be free from rust, breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein.		
		10. Comes with a brand printed permanently onto the box		
		11. Must be brand new		
6	**Burner, Bunsen**	Functional Specifications: Used to :		
		a) produce single, hot, continuous, consistent open blue flame		
		b) for slow/gentle heating of glasswares and substances,		
		c) rapidly heat high-boiling liquids with low flammability like water		
		d) heat, sterilize/accelerate/ trigger chemical reactions,		
		e) for combustion purposes		
		Performance Specifications: Must be able to produce a single, hot, continuous, consistent open blue flame to:		
		a) visually determine the hottest part of the Bunsen flame		
		b) visually determine the identity of an unknown metal or metalloid ion based on the characteristic color the chemical/salt emits on the Bunsen flame to investigate reactions of ions and apply these in qualitative analysis through an activity, on Flame Test		
		c) bend a glass tubing		
		d) used as a heating medium to demonstrate distillation, as one of the simple separation techniques		
		e) slow/gentle heating of glasswares and substances		
		f) rapidly heat high-boiling liquids with low flammability like water		
		g) heat,to sterilize, to accelerate, and to trigger chemical reactions,		
		h) for combustion purposes and techniques		
		Design Specifications:		
		1.Type : Gas type with accessories		
		2. Features a long, hollow burner tube with stabilizer top and serrated inlet tube		
		3. Material for burner tube : Aluminum, with the following dimensions:		
		. a) Diameter of burner tube: 11-12 mm diameter		
		b) Over-all height: 152-155 mm		
		4. With flame stabilizer		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5.With threaded gas needle valve (located opposite to serrated inlet tube)		
		6. Material of base: Nickel-plated zinc-alloy		
		7. Must be able to stand solidly/is stable when placed on a level surface		
		8. Individually packed in a sturdy box		
		9. With User's Manual and Operations Guide in English		
		10. Comes with Activity Sheets with Teacher's Manual in English		
		11. For numbers #9 to 10; the technical specifications (a-e) must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) In 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		12. Must be free from rust, cracks, chipped rims and sharp edges, surface irregularities and all other defects not stated herein.		
		13. Comes with a brand printed permanently on the box		
		14. Must be brand new		
7	**Cork Stopper # 5 (for Ø 16mm test tube)**	Functional Specifications: Used to seal the openings of 16 mm diameter test tubes and other laboratory glassware to prevent leaks, hazards and contamination to yield positive results during chemical reactions		
		Performance Specifications: Must be able to seal the openings of 16 x 150 mm test tubesand other laboratory glassware and to prevent leaks, hazards and contaminationto yield positive results during chemical reactions		
		Design Specifications:		
		1. Features an extra Select Grade cylindrical with a tapered bottom end with fewer lenticels (crevices)		
		2. Material of cork : Elastic and near impermeable with the following dimensions:		
		a) Height : 22-22.5 mm		
		b) Top Ø : 15-15.5 mm		
		c) Bottom Ø: 13-13.5 mm		
		3. Number of cork stopper: #5		
		4. Must perfectly fit the 16 x 150 mm test tube		
		5. Must be free from defect of discontinuities in the cork tissue such as "lung", exfoliation, and insect,ant/worm galleries and all other defects not stated herein.		
		6. Packed in a resealable plastic bag		
		7. With brand printed permanently on the resealable plastic bag		
		8. Must be brand new		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
8	**Crucible with lid/cover**	Functional Specifications: Used as a container to heat metals or other substances may be melted or subjected to very high temperatures		
		Performance Specifications: Must be able to contain elements, compounds, metals, organic compounds or other substances to be melted or subjected to very high temperatures to determine mass relationship in a chemical reaction		
		Design Specifications:		
		1. Features a high/tall form cylindrical crucible		
		2. Capacity : 30 mL		
		3. Material : Porcelain, with the following dimensions:		
		a) Height : 43-50 mm		
		b) Base diameter: 24-26 mm		
		c) Top diameter: 33-40 mm		
		4. Glazed inside and out, except outside bottom and rim.		
		5. With crucible cover completely glazed except for rim.		
		6.Must be able to stand solidly flat/is stable when placed on a level surface		
		7.Must be free from breakage, cracks, chipped rims and and sharp edges, surface irregularities and all other defects not stated herein		
		8. Comes with a brand printed permanently in the comparmentalized sturdy box		
		9. Must be brand new		
9	**Dessicator**	Functional Specifications: Used for removing moisture for drying, preserving, or storing moisture-sensitive substances		
		Performance Specifications: Must be able to dry, preserve, or store moisture-sensitive substances		
		Design Specifications:		
		1. Material : Borosilicate, clear, transparent, and bubble-free thick high quality annealed glass with the following dimension: Flange Outer diameter: 150 mm Flange Inner diameter: 140 mm Top Chamber Dia.: 150 mm Height: 220 mm Maximum Clearance Above Plate: 120 mm.		
		2. Heavy duty and of high temperature resistance, strong, durable and reusable.		
		3. With ground gass joint lid/cover		
		4. With a glazed porcelain perforated plate that fits perfectly above the lower chamber with a 50 mm center hole that is held over the desiccant to separate sample and desiccant Diameter of porcelain perforated plate: 135 mm		
		5. Capacity: 1.5 L		
		6. Must be free from breakage , cracks, chipped and sharp edges and surface irregularities including all other defects not stated herein		
		7. Comes with a brand marked permanently on the box		
		8. Must be brand new		
10	**Dish, Evaporating, 75 mL**	Functional Specifications: Used to contain/hold substances and to heat chemical solutions gradually, driving off the water to leave residual chemical solute		
		Performance Specifications: Must be able to contain/hold substances and to demonstrate evaporation, as one of the techniques in separating mixtures, by heating chemical solutions gradually, driving off the water to leave residual chemical solute		
		Design Specifications:		
		1. Features a deep form, broad, and wider at the top, with round bottom		
		2. Material : Porcelain, with the following dimensions:		
		a) Diameter : 80-84 mm		
		b) Height/depth : 30-35 mm high		
		3. Capacity: 75 mL		
		4. With pouring lip/spout		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5. Must be free from breakage, cracks, chipped rims and sharp edges, other surfaceirregularities and other defects not stated herein.		
		6.Must be able to contain the salt solution for an experiment on evaporation		
		7. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, surface irregularities including all other defects not stated herein.		
		8. Each dish is individually packed,wrapped in paper, and packed in a sturdy box		
		9. Comes with a brand printed permanently in the sturdy box		
		10. Must be brand new		
11	**Distillation set-up: Condenser, Liebig-type**	Functional Specifications: Used to condense the water vapor into its liquid state producing a distillate		
		Performance Specifications: Must be able to condense the water vapor into its liquid state producing a distillate, used in distillation, as one of the simple separation techniques		
		Design Specifications:		
		1. Features two concentric straight glass tubes, the inner one being longer and protruding at both extremities, surrounded by a water jacket with sealed inner tube and outer tube of an inner straight tube surrounded by an outer jacket tube, the cool water flows through the outer jacket to condense the vapor in the inner tube, having a better cooling performance than air condenser.		
		2. Material : Transparent, smooth, clear, bubble-free borosilicate glass, with the following dimensions:		
		a) Tubulation OD: 9-15 mm		
		b)Jacket OD : 40- 43 mm		
		c)Jacket length : 300-301 mm		
		d)Over-all Length: 458-460 mm		
		3. With the following permanent inscriptions and numbers permanently enamelled onto the glass:		
		a) Manufacturer's name or trademark b) Ground cone and socket joint: 24/40		
		4. With sealed inner tube		
		5. With Standard Taper Outer and Inner Joints permanently enamelled onto the glass the glass		
		5. With a **drip tip** at the bottom		
		6. Accessories:		
		a) One (1) pc rubber stopper that will fit upper (inlet) tube		
		i) Number of rubber stopper : #3		
		ii) Number of hole : One (1) hole		
		iii)Diameter of hole : 5.0-5.5 mm		
		iv) Hardness : 40-45 Duro		
		b) Rubber tube		
		Material of rubber Hose : Non-tacky, Latex rubber tube with the following dimensions:		
		ii) Inner diameter : Ø 8.0-8.5 mm		
		iii) Outer diameter : Ø 12.0-12.5 mm		
		iv) Length : 3000-3005 mm long		
		v) Color of rubber tube : Amber		
		7. The glass is wrapped in bubble wrap, enclosed in a polystyrene and packed in a sturdy box while the rubber stopper /tube is placed in a resealable plastic bag.		
		8. Must be free from breakage, cracks, chipped rims and sharp edges, striae, surface irregularities and all other defects not stated herein		
		9. Must be able to produce a distillate during experiment on Distillation using this item as part of the whole set		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		10. Must have User's Manual in Englis on the installation, use and care, proper storage with repair and maintenance		
		11. With Activity Sheets/Teacher's Manual in English		
		12. For numbers #10 to 11; the technical specifications (a-e) must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		13. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		14. Must have a brand enamelled permanently onto the glass		
		15. Must be brand new		
12	**Distillation set-up: Distilling Flask, borosilicate, 250ml,**	Functional Specifications: Used to hold/ contain the liquid to be distilled in distillation, as one of the simple separation technique		
		Performance Specifications: Must be used to hold/ contain the liquid to be distilled in distillation, as one of the simple separation technique		
		Design Specifications:		
		1. Features a long neck, a side arm that facilitates condensation, and a round bottom for uniform heating .		
		2. Material : Clear, transparent, bubble-free borosilicate glass with a beaded rim with the following dimensions:		
		a) Flask Height : 240-250 mm		
		b) Side Arm Length: 129-130 mm		
		c) Side arm : 76 to 78 mm below the top of the neck		
		3. With the following permanent inscriptions and numbers permanently enamelled onto the glass:		
		a) Capacity: 250 mL		
		b) Manufacturer's name or trademark		
		c) With permanent large white marking spot		
		4. Supplied with an accessory		
		a) rubber stopper that fits the mouth of the distilling flask		
		i) Hardness: 40-45 Duro		
		ii) Number of hole : One (1)		
		iii) Diameter of hole: 5-5.5 mm		
		5. Wrapped in bubble wrap, enclosed in a polystyrene and packed in a padded sturdy box		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		6. Must be free from breakage, cracks, chipped rims and sharp edges, striae, surface irregularities and all other defects not stated herein		
		7. Must be able to produce a distillate during an experiment on Distillation using this item as a part of the distillation setup		
		8. Must have a brand enamelled permanently onto the glass		
		9. Must be brand new		
13	**Double burette clamp/holder**	Functional Specifications: Used to hold and secure two burettes on a stand, so that each burette is fixed and more convenient for the experiment.		
		Performance Specifications: Must be used to hold and secure two burettes simultaneously on a stand, so that the burettes are fixed and more convenient to perform acid-base titration experiment to determine concentration of solutions.		
		Design Specifications:		
		1. Features a double Y-shaped or butterfly-shaped items which have spring action clamps.		
		2. Material of body: Die cast aluminum with chemical resistant white enamel finish,with the following dimensions:		
		Length range : 245-262 mm		
		Width range : 120-127 mm		
		Mounting hole diameter (Φ): 15-36 mm		
		3. Color of body : White enamel		
		4. Material of sleeves/jaws/grips : Vinyl or rubber for excellent grip		
		5. Color of sleeves/jaws/grips : Colored		
		Distance between sleeves/jaws/grips : 85 -120 mm		
		6. With 4 spring action clamps, 2 on each opening		
		7. With two separate adjusting knobs or squeeze clamping mechanism		
		8. Color of adjusting knobs : Colored		
		9. Mounts directly to standard support rod with built in hook connector.		
		10. The dual metal burette clamp supports burettes from 10-100 mL (10-100 cc).		
		11. They can be attached to support stand rods from16 mm to 17 mm diameter		
		12. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein.		
		13. Comes with a brand marked permanently onto the body/box		
		14. Must be brand new		
14	**Electrolysis Apparatus, student-type (Brownlee)**	Functional Specifications: Used to demonstrate and describe the decomposition reactions at the electrodes during the electrolysis of water, producing 1:2 ratio of hydrogen & oxygen gases respectively, by passing DC current through water.		
		Performance Specifications: Must be able to demonstrate and describe the decomposition reactions at the electrodes during the electrolysis of water, producing 1:2 ratio of hydrogen & oxygen gases respectively, by passing DC current through water. Positive results occur:		
		a) When an ember in a stick is introduced onto the test tube with hydrogen gas, it pops.		
		b) If the gas is oxygen, the ember must glow more		
		Design Specifications:		
		1. Shape of Jar : Cylindrical container with a flat bottom, with a wide mouth and a small turned-out lip for pouring		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2. Material of jar: Clear, transparent, smooth, and bubble-free borosilicate glass, with the following dimensions:		
		a) Diameter : 114-130 mm		
		b) Height : 127-160 mm		
		3. Capacity: 1000 mL		
		4. Comes with two (2) electrodes		
		a) Material of two electrodes: Platinum		
		5. Comes with an acid-proof insulating support to hold the two binding posts (one red, one black)		
		6. Holder of two test tubes : Two (2) spring clips		
		7. With two (2) **reusable** test tubes with graduations		
		a) rimless		
		b) graduated from its bottom to top. Zero starts at bottom and 25- 27 mL on top/mouth of test tube		
		c) Material of test tubes : Borosilicate , clear, smooth, transparent and bubble-free **reusable** glass, free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein, with the following dimensions:		
		c1) Diameter: 18 mm		
		c2) Length : 150-151 mm long		
		c3) Capacity : 25-27 mL		
		d) With heavy uniform wall thickness, excellent heat resistance, round bottom glass		
		e) With permanent graduation lines of approx. volume and inscriptions in high contrast fine, clean, continuous and of uniform width,and in colored enamel.		
		f) With **Certification from the manufacturer** that the test tubes are **reusable and not disposable**		
		8. Comes with power source: 220 V -240 V AC input)/ (0-12 V) DC output, and with switch selector		
		9. Comes with 9 V battery with one (1) battery snap		
		10. Comes with two (2) connecting wires (1 red, 1 black)		
		a) Length : 304-310 mm		
		b) Type of wire : Stranded		
		c) Gauge no. : 20 - can be seen printed on the insulation of the wire		
		d) Comes with with alligator clip soldered on one end of the wires with banana plugs soldered on the other end of each wire (1 red, 1 black)		
		12. Comes with two (2) replacement graduated test tubes		
		a) rimless		
		b) graduated from its bottom to top. Zero starts at the bottom and with continuous complete number markings in series		
		c) Material of test tubes : Borosilicate , clear, transparent and bubble-free-glass, with the following dimensions:		
		d)Diameter :18.0-18.5 mm		
		e) Length :150-151mm long		
		f) Capacity : 25 mL		
		g) With heavy uniform wall thickness, excellent heat resistance, round bottom glass		
		h) With permanent graduation of approx. volume and inscriptions in high contrast white enamel.		
		i) With brand etched/printed permanently onto the item		
		13. Comes with two (2) solid rubber stoppers to fit perfectly the two (18 x 150 mL) test tubes		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		14. Must be able to separate water into its elements producing two gases (hydrogen and oxygen) with a **2:1 ratio**, a) 2 mL hydrogen: 1 mL oxygen; b) 4 mL hydrogen: 2 mL oxygen, c) 6 mL hydrogen: 3 mL oxygen, d) 8 mL hydrogen: 4 mL oxygen, e) 10 mL hydrogen: 5 mL oxygen, and so on until 6-8 mL of the has been collected for hydrogen gas, during the Electrolysis of Water experiment, and then test for the gases. Testing for each of the gases: a) For the gas collected at the negative electrode, a **popping sound must be produced - Hydrogen gas** b)For the gas collected at the positive electrode, **the ember must glow more - Oxygen gas** supports combustion		
		15.With a well written Operations Manual and Assembly Guide in English		
		16.With sample Activity Sheets/Teacher's Manual in English		
		17. With Detailed instructions provided.		
		18. For numbers 15-17, the following technical specifications from (a-e) must be followed:		
		a) For List of materials, In Table form		
		b) For User's Manual, Teacher's Guide, Student Worksheets, Instruction Sheets/ Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic keycard that shall containthe actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Orientation:Portrait		
		v) Margins on all sides with 2 point width border line		
		vi) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		19. Comes with a **training video** that shows the actual equipment submitted and approved during the sample evaluation in a **USB** and shall contain the following: I. Training Video Contents: "a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment" II. Training Video details: "a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents)."		
		20. Placed in bubble wrap, enclosed in polystyrene and comes complete with a padded box with storage slots for each item to help prevent glass breakage.		
		21. Must be free from breakage, cracks, chipped rims and sharp edges surface irregularities and other defects not stated herein		
		22. Comes with a brand etched/enamelled permanently onto the glass		
		23. Must be brand new		
15	**Flask, Erlenmeyer, borosilicate, narrow-mouth, 250 mL**	Functional Specifications: Used to :		
		a) contain/hold a small chemical reaction,		
		b) mix solids and liquids,		
		c)heat substances over a Bunsen/alcohol burner's flame up to over 100 °C or		
		d)collect them in a titration/distillation experiment		
		Performance Specifications: Must be able to:		
		a) contain/hold a small chemical reaction ,		
		b) mixes solids and liquids during chemical reaction,		
		c) heats substances up to 100°C over a Bunsen burner's flame up to 250 mL, or		
		d) serves as a reaction vessel in a titration experiment, and to collect distillate during distillation		
		Design Specifications:		
		1. Features a conical body, a cylindrical short neck , narrow mouth, with sloping sides, beaded rim, and with a flat bottom		
		2. Material : Clear, and transparent bubble-free, smooth, borosilicate, glass with the following dimensions:		
		a)Outside diameter: 80-82 mm		
		b)Height: 130-132 mm		
		c) Thickness: 1.5 to 2.0mm		
		b) Neck inside diameter range : 28 to 30 mm		
		3. With uniform wall thickness		
		4. With **narrow mouth**, heavy duty beaded rim, graduated		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5. With permanent durable white enamel graduations of approximate volumes, large white block letters,numbers and easy to read inscriptions enamelled onto the glass, which includes the following:		
		a) Manufacturer's name or trademark		
		b) Capacity: 250 mL		
		c) With large white marking spot		
		d) With single graduated metric scale		
		d1) Graduation range : 50 -200 mL		
		d2) Graduation interval: 25 mL		
		d3) Graduation starts at: 50 mL in 25 mL increments e) Tolerance: ±6% and other inscriptions enamelled onto the glass		
		6. Wrapped in paper and individually packed in a compartmentalized box		
		7. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		8. Must be able to withstand heating of water up to 150 deg C		
		9. Placed in bubble wrap and packed in a sturdy box to help prevent glass breakage.		
		10. Comes with a brand enamelled permanently onto the glass		
		11. Must have a brand printed permanently on the glass		
		12. Must be brand new		
16	**Funnel, borosilicate, fluted**	Functional Specifications: Used to direct the smooth flow of the liquid or fine-grained substances into another container tp prevent spills		
		Performance Specifications: Must be able to direct the smooth flow of the liquid or fine-grained substances into another container to prevent spills		
		Design Specifications:		
		1.Type : 60 ° angle, **Fluted** short stem funnel		
		2. Shape: A wide, inverted conical top with narrow short circular tube at the bottom, with depressed inside flutings		
		3. Material: Borosilicate, clear, transparent,bubble-free glass,with the following dimensions:		
		a) Top outside diameter: 75-86 mm		
		b) Stem outer diameter : 8-9.5 mm		
		c) Stem length : 72-76 mm		
		d) Total Height : 139-140 mm		
		4. With heavy beaded rim/edge and heavy uniform wall for strength.		
		5. With slanted fire polished tip, filter angle (angled 60°) and depressed inside fluting help reduce filtering time		
		6. Wrapped in paper, enclosed in bubble wrap, and individually packed in a sturdy box		
		7. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		8. Comes with a brand		
		9. Must be brand new		
17	**Glass Tubing**	Functional Specifications: Used to contain/hold/mix liquids or gases during chemical reactions and to connect other pieces of equipment/glasswares to a gas or liquid assembly		
		Performance Specifications: Must be able to:		
		a) be bent to onnect other pieces of equipment/glasswares to a gas or liquid assembly like in the activity " Flowing Up" and connect Florence flask to the Liebig condenser as a substitute for distilling flask for Distillation set up		
		b) contain/hold/mix liquids or gases during chemical reactions, to relate the rate of gas effusion with molar mass and demonstrate Graham's law of effusion in an experiment where a white ring mass is observed		
		Design Specifications:		
		1. Shape : Long slender hollow glass		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2. Material : Soda lime, clear, transparent, bubble-free glass tubing, with the following dimensions:		
		a) Outside diameter : 6.0-6.5 mm		
		b) Wall thickness : 1.0-1.2 mm		
		c)Length: 1219-1500 mm		
		3. With fire polished ends		
		4. Individually wrapped in used newspaper, enclosed in a bubble wrap, and packed in a sturdy box		
		5. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		6. Comes with a brand printed permanently on its packaging		
		7. Must be brand new		
18	**Manometer, Open U-tube**	Functional Specifications: Used to indicate the difference in the heights of the manometric liquid to measure pressure		
		Performance Specifications: Must be able to indicate the difference in the heights of the manometric liquid to measure pressure by getting the pressure difference		
		Performance Specifications: Must be able to indicate the difference in the heights of the manometric liquid to measure pressure by getting the pressure difference		
		Design Specifications:		
		1. Type : Differential pressure manometer		
		2. Shape : U-shaped glass tube partially filled with liquid, with no moving parts and requires no calibration		
		3. Material : Glass		
		4. With a 50-52 cm arm with funnel top on one arm and 4.5-5.5 cm bent (90°) with 15-16 mm rifted tip on another arm for easy connection		
		5. U-tube is mounted on a board, fixed on a wooden stand for vertical mounting using metal clips		
		a) Material of stand : Wood/en		
		b) Dimensions of back plate		
		i) Length : 540-542 mm		
		ii) Width : 90-102 mm		
		6. A millimeter scale is fitted between the arms of the tube.		
		a) Scale having graduation range: 0-50 cm		
		b) Graduation increment: 1 mm, with 0 at the bottom		
		7. Accessories:		
		a) With latex tubing, glass wall 2 mm thickness, 7.5-8.0 mm inner diameter.		
		i) Material of rubber tubing: Non-toxic non-tacky latex rubber tubing for the laboratory activity.		
		ii)Length of rubber tube: 1000 mm		
		8. Stand with glass tube placed in bubble wrap, enclosed in bubble wrap and packed individually in a sturdy box		
		9. Accessories enclosed in resealable plastic bag		
		10. With User's Manual in English		
		11. With Assembly Guides and Activity Sheets		
		12. For numbers #10 and 11; they must be:		
		a) In Table form for List of materials, in A4 size, glossy paper,laminated		
		b) Insentences format for instruction sheets/assembly guides		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c)Printed in original copy, not photocopied		
		d) In colored drawings/illustrations		
		e) in 0.3 minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		13. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein.		
		14. Individually packed in a sturdy box		
		15. Comes with a brand printed permanently onto the wooden stand		
		16. Must be brand new		
19	**Mortar and Pestle, porcelain, 150 mL.**	Functional Specifications: Used to pulverize/mash/grind and to mix materials in a mortar using a pestle		
		Performance Specifications: Must be able to pulverize/mash/grind and mixes materials in a mortar using a pestle to demonstrate how particle size affects solubility and the rate of chemical reaction.		
		Decreasing the size of the particles increases the rate of dissolving and speeds up the rate of reaction because the surface area of the reactant has been increased.		
		Design Specifications:		
		A. Mortar		
		1. Shape of mortar : Deep form, bowl shape, with wide mouth , and with deeply molded, smooth rounded bottom		
		2. Material for mortar and pestle: Porcelain, with the following dimensions:		
		a) Outside diameter : 130-132 mm		
		b) Height/Depth : 65-85 mm		
		3. Capacity: 150 mL		
		4. With pouring lip		
		5. With unglazed grinding surface (interior) and uniformly glazed exterior		
		B. Pestle:		
		6. Shape of pestle: Cylindrical with bulbous bottom, with the following dimensions:		
		a) Length range : 133-160 mm and		
		b) Diameter range: 28-40 mm diameter at its widest point.		
		7. Material of pestle: A heavy bat-shaped porcelain		
		8. Uniformly glazed on its handle and rough on opposite end		
		9. The set is individually wrapped, enclosed in a bubble wrap and packed in a sturdy box		
		10. Must be free from breakage, cracks , chipped rims, sharpedges, all surface irregularities and all other defects not stated herein		
		11. Comes with a brand marked permanently on the box		
		12. Must be brand new		
20	**Osmosis Apparatus**	Functional Specifications: Used to to show that water passes through a semi-permeable membrane causing a rise in the level of water in the thistle tube		
		Performance Specifications: Must be able to show that water passes through a semi-permeable membrane causing a rise in the level of water in the thistle tube, to describe/demonstrate the effect of concentration on one of the colligative properties (osmotic pressure) of solutions		
		Design Specifications:		
		1. Features a a long shaft of tube with a reservoir and a funnel like/flared rim section at the top and at the bottom. The shaft is designed to allow insertion through a small hole present in a Y-shaped support stand giving way for the tube to be inserted into a container.		
		2. Comes as a complete set, which is composed of the following items:		
		a) With one (1) pc battery jar = 600-605 mL cap		
		b) With one (1) pc double thistle tube with brand name etched onto the glass		
		b1) Shape of double thistle tube: A long shaft of tube that ends in a reservoir bulb with a funnel shaped/flared rim at the top and bottom part		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		b2) Material of double thistle tube and jar : Smooth, clear, transparent free from bubbles, striae, or other imperfections borosilicate glass, with the following dimensions:		
		Length of double thistle tube : 405-410 mm		
		Diameter of each thistle tube (top and bottom): 29-30 mm		
		Diameter of glass tube: 14-16 mm		
		c) With one (1) pc stable **Y-shaped** metal support stand, **safe to use, and absence/free of all sharp edges**, all surface imperfections/irregularities and all other defects not stated herein		
		c1) Shape of metal support stand: Y-shaped support stand		
		c2) Material of support stand: Aluminum		
		c3) With a black plastic adjusting screw at the rear end with the red adjusting screw near the center of the Y-support stand used to adjust the opening of the stand when the double thistle tube is mounted vertically in place		
		d) Comes with ten (10) pc semi-permeable membrane		
		3. Each item is individually placed in a snap fit organizer shaped into each item and packed as a complete set in a padded sturdy polystyrene box		
		4. With Instruction Manual and Activity Sheets		
		5. With a well written User's Manual (Assembly guides) and Activity Sheets in American English, with technical specifications details(a-e) as follows:		
		a) original print		
		b) A4 size copy paper (80 gsm)		
		c) With colored pictures, drawings/illustrations		
		d)Margin of 1/2 inch on all sides: with 2 point width border line		
		e) Lay out orientation : Portrait		
		f) Title: OSMOSIS APPARATUS shall be placed on the top center		
		i) Font style: Times New Roman		
		ii) Font size: 36		
		iii) UPPERCASE		
		iv) BOLD		
		g) Labels		
		i) Font style : Times New Roman		
		ii)Font size: 14.		
		iii) First letter of the label is capitalized		
		iv) Line with arrowhead of 1.25 width shall point to the specific part being labeled		
		h) Sentences must be grammatically correct and with correct spelling, pucntuations and terminologies		
		i) with colored illustrations and drawings		
		j) with 0.3 mm minimum thickness plastic laminated in thick plastic		
		6. Must be free from rust and dirt, breakage, cracks , chipped rims, sharp edges, other surface irregularities and all other defects not stated herein		
		7. Placed in bubble wrap, with storage slots for each item enclosed in polystyrene and packed as a set in a padded box to help prevent glass breakage.		
		8. Comes with a brand permanently etched onto the double thistle tube and in the box		
		9. Must be brand new		
21	**Reagent Bottle, narrow-mouth, amber, borosilicate, 250 mL**	Functional Specifications: Used to contain/store and to provide UV protection of prepared light sensitive solutions/substances to prevent change/alteration in the composition of their contents		
		Performance Specifications: Must be able to contains/store and to provide UV protection for the prepared light sensitive solutions/substances to prevent change/alteration in the composition of their contents.		
		Design Specifications:		
		1. Shape : Cylindrical narrow-mouth bottle		
		2. Material : Borosilicate, smooth, bubble-free glass with the following dimensions:		
		a) Bottle diameter range: 66-72 mm		
		b) Neck I.D. range : 23-28 mm		
		c) Over-all height: 130 to 150 mm		
		3. Color: Amber		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		4. With approximate volumes, capacity, and other markings are in permanent white enamel which resists aggressive washing solutions		
		a) Manufacturer's name or trademark		
		b) 250 mL		
		c) white marking field/spot in permanent white enamel		
		5. With octagonal plastic stopper Socket size: 19/26 that fits the mouth well		
		6. With a white marking field/spot in permanent white enamel		
		a) logo/brand name		
		b) 250 mL		
		7.Wrapped in paper, enclosed in bubble wrap and packed individually in a padded sturdy box		
		8. Must be free from breakage, cracks , chipped rims, sharp edges, striae, all surface irregularities including all other defects not stated herein		
		9. Comes with a brand enamelled permanently onto the glass		
		10. Must be brand new		
22	**Reagent Bottle, wide-mouth, transparent, borosilicate, 250 mL**	Functional Specifications: Used to hold/ contain/store prepared solutions/ substances		
		Performance Specifications: Must be able to hold/contain/store prepared solutions/substances		
		Design Specifications:		
		1. Shape: Cylindrical wide-mouth bottle		
		2. Material: Borosilicate, clear, smooth, transparent and bubble-free glass, with the following dimensions:		
		a) Bottle diameter : 69 mm to 73 mm		
		b) Mouth diameter: 34 mm to 44 mm		
		c) Height : 129 mm to 142 mm		
		3. Features no-drip pour lip		
		4. With ground-in glass stopper		
		5. With air tight seal		
		6. With approximate volumes, capacity, and other markings are in permanent white enamel/stain which resists aggressive washing solutions		
		a) Manufacturer's name or trademark		
		b) 250 mL		
		c) white marking field/spot in permanent white enamel		
		7. Wrapped in paper, enclosed in bubble wrap and packed individually in a sturdy box		
		8. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein		
		9. Comes with a brand enamelled onto the glass		
		10. Must be brand new		
23	**Rubber Stopper # 0 (for Ø 16mm test tube)**	Functional Specifications: Used to seal the openings of 16 mm diameter test tubes and other laboratory glassware that require a tighter seal or a greater degree of chemical resistance.to prevent leaks, hazards and contamination		
		Performance Specifications: Must be able to seal the openings of 16 x 150 mm test tubes and other laboratory glassware that require a tighter seal or a greater degree of chemical resistance.to prevent leaks, hazards and contamination		
		Design Specifications:		
		1. Shape: Cylindrical with a tapered bottom end		
		2. Material : Rubber compound with the following dimensions:		
		a) Height : 25-25.5 mm		
		b) Top Ǿ : 17-17.50 mm		
		c) Bottom Ǿ : 13-13.5 mm		
		3. Hardness : 40-45 Duro		
		4. Packed in resealable plastic bag		
		5. With no. 0 embossed onto the rubber stopper		
		6. Must be free from cracks, sharp edges, and all other surface imperfections including all other defects not stated herein		
		7. Comes with a brand marked permanently in the bag		
		8. Must be brand new		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
24	**Spatula, spoon, porcelain and glazed**	Functional Specifications: Used to hold/contain and transfer solids and liquids from one container to the other		
		Performance Specifications: Must be able to hold/contain and transfers solids and liquids from one container to the other		
		Design Specifications:		
		1. Features a white, broad, flat, blade (spatula) on one end and a spoon on the other end.		
		2. Material : Uniformly glazed smooth finish porcelain		
		a) Capacity: 0.3 mL		
		b) Over all Length : 121-142 mm		
		3. Must be free from breakage, cracks,chipped edges and all other defects not stated herein		
		4. Wrapped in paper, enclosed in bubble wrap and packed in a sturdy box.		
		5. Must be free from cracks, sharp edges, and all other surface imperfections including all other defects not stated herein.		
		6. Comes with a brand marked permanently in the box		
		7. Must be brand new		
25	**Stirring Rod, Ø 6 mm x 250 mm long**	Functional Specifications: Used to mix liquids and solids		
		Performance Specifications: Must be able to mix liquids and solids well to speed up the dissolving process and increases the rate of reaction		
		Design Specifications:		
		1. Features a long, slender cylindrical solid glass, with the same thickness and slightly longer than a drinking straw and with rounded fire polished ends.		
		2. Materia l: Clear, transparent bubble-free stir stick solid borosilicate glass with the following dimensions:		
		a) Diameter(Ø) : 6-6.3 mm		
		b) Length: 250-254 mm long		
		3. With rounded and fire polished ends		
		4. Wrapped in paper, enclosed in bubble wrap and packed in a sturdy box		
		5. Must be free from breakage, cracks, chipped unpolished ends, all other surface imperfections icluding all other defects not stated herein		
		6. Comes with a brand marked permanently in the box		
		7. Must be brand new		
26	**Test tube brush**	Functional Specifications: Used to clean test tubes and other small sized glasswares		
		Performance Specifications: Must be able to clean test tubes and other small-sized glasswares with densely filled radial tip and head brush to make complete contact with walls, corners and bottom.		
		Design Specifications:		
		1. Features a radial tufted tip white nylon bristles and brush head lined against a rather sturdy wire handle with a looped end to make complete contact with walls, corners and bottom to clean test tubes and other small sized glasswares .		
		2. Material of bristles : Medium stiff nylon with the following dimensions:		
		a) Diameter of bristle section: 18-19 mm		
		b) Length of bristle section : 82-102 mm		
		c) Over-all length: 228 -229 mm		
		3. Material of handle: Galvanized steel wire		
		4. Type of wire handle : Common loop twisted wire		
		5. With circular wire loop for hanging		
		6. Packed in a resealable plastic bag		
		7. Must be free from rust, sharp edges, all other surface irregularities including all other defects not stated herein		
		8. Comes with a brand marked permanently in the box		
		9. Must be brand new		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
27	**Test Tube, borosilicate, Ø 16 mm x 150 mm long**	Functional Specifications: Used to contain/hold a small chemical reaction , to mix small quantities of solids and liquids, and to heat small quantities of substances		
		Performance Specifications: Must be able to contain/hold a small chemical reaction and , mixes solids and liquids, heats small quantitiy of substances up to more than 100°C over a Bunsen burner's flame		
		Design Specifications:		
		1. Features a finger-like length of glass tubing, open at the top, usually with a rounded lip at the top, and a rounded 'U' shaped bottom		
		2. Material of test tube: Borosilicate , clear, transparent and bubble-free, **reusable glass**, with rim, with the following dimensions:		
		a) Outside Diameter: 15.8-16.0 mm		
		b) Thickness: 1.3 -1.4 mm		
		c) Length: 150-152 mm		
		d) Comes with a certification from the manufacturer that the test tube is **reusable and not disposable**		
		3. Capacity: 20 mL		
		4. With heavy uniform wall thickness, excellent heat resistance		
		5. With large, white enamel marking spot		
		6. Test tubes must be reusable (not disposable)		
		7. Wrapped individually in tissue paper, enclosed in bubble wrap and packed in compartmentalized box		
		8. Must be free from breakage, cracks, chipped rims, surface irregularities and all other defects not stated herein		
		9. Comes with a brand enamelled permanently in the glass		
		10. Must be brand new		
28	**Tong, Crucible**	Functional Specifications: Used to lift and hold crucibles,remove the lids from crucibles, transfer evaporating dishes or picking small objects out of a reaction container		
		Performance Specifications: Must be able to lift and hold crucibles, remove the lids from crucibles, transfer evaporating dishes or picking small objects out of a reaction container.		
		Design Specifications:		
		1. Features a scissor-like and a long bent neck tongs, with two anti-skid pincers or pieces of metals that concave together, which allow the users to grasp a hot crucible, flasks, evaporating dishes, or even small beakers		
		2. Material : Stainless steel,durable, stable, rust and heat resistant		
		a) Color: Silver		
		b) Finish: Smooth		
		c) Overall Length: 228 -229 mm		
		3. With riveted joints		
		4. With serrated tips.		
		5. Enclosed in resealable bag and packed in a sturdy box		
		6. Must be free from rust, dirt, cracks, chipped and sharp edges and surface irregularities including all other defects not stated herein		
		7. Comes with a brand marked permanently in a box		
		8. Must be brand new		
29	**Vial, screw-neck, 25 ml. (with screw-type plastic cap)**	Functional Specifications: Used to hold/contain/store/mix small quantities of samples/ solutions/substances up to 25 mL		
		Functional Specifications: Used to hold/contain/store/mix small quantities of samples/ solutions/substances up to 25 mL		
		Performance Specifications: Must be able to hold/contain/store/mix small quantities of samples up to 25 mL		
		Design Specifications:		
		1. Type : Bottle with threaded Screw cap		
		2. Shape : Bottle-like shape with a threaded neck, solid plastic closure and with a flat bottom.		
		3. Material : Borosilicate clear, transparent, and bubble-free glass, with the following dimensions:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a) Outside Diameter : 25-50 mm		
		b) Length: 60-80 mm		
		4. With screw- type solid plastic cap		
		5. Shape of neck : Cylindrical, round		
		6. Neck finish : Continuous thread		
		7. Cap Color: Colored		
		8. Cap Attached: No		
		9. Cap Material : Plastic		
		10. Closure style : Solid top, screw thread cap		
		11. Capacity: 25 mL		
		12. Packed individually in a compartmentalized/partitioned box		
		13. Must be free from breakage , cracks, chipped and sharp edges and surface irregularities including all other defects not stated herein		
		14. Comes with a brand marked permanently on the box with at least five years existence in the glasswares industry		
		15. Must be brand new		
30	**Vial, screw-neck, 50 mL. (with screw-type plastic cap)**	Functional Specifications: Used to hold/contain/store/mix small quantities of samples/ solutions/substances up to 50 mL		
		Functional Specifications: Held/contained/stored/mixed small quantities of samples/ solutions/substances up to 50 mL		
		Performance Specifications: Held/contained/stored/mixed samples/solutions/substances up to 50 mL		
		Design Specifications:		
		1. Type : Bottle with threaded Screw cap		
		2. Features a bottle-like shape with a threaded neck, screw cap plastic closure and with a flat bottom		
		3. Material : Borosilicate,clear, transparent, and bubble-free glass with the following dimensions:		
		a) Outside Diameter : 25-50 mm		
		b) Length : 100-108 mm		
		4. Capacity: 50 mL		
		5. Shape of neck : Cylindrical, round		
		6. Neck finish : Continuous thread		
		7. Cap Color :Colored		
		8. Cap Attached: No		
		9. Cap Material : Plastic		
		10. Closure style : Solid top, screw thread cap		
		11. Packed individually in a compartmentalized box		
		12. Must be free from breakage , cracks, chipped and sharp edges and surface irregularities including all other defects not stated herein		
		13. Comes with a brand marked permanently on the box		
31	**Volumetric Flask, borosilicate 250 mL**	Functional Specifications: Used to measure/prepare/contain a precise volume of standard solutions at a certain temperature and precise dilution of solutions up to 250 mL		
		Performance Specifications: Must be able to measure/prepare/contain a precise volume of standard solutions at a certain temperature and precise dilution of solutions up to 250 mL		
		Design Specifications:		
		1. Type: Class A		
		2. Shape : A round or pear-shaped bulb, a long thin neck topped by a polyethylene stopper/snap cap and with flat bottom		
		3. Material of body: Borosilicate , clear, transparent and bubble-free, glass with the following dimensions:		
		a) Height: 225 mm		
		b) Outside diameter : 78 mm (approx.)		
		c) Size: 250 mL		
		d) Tolerance: ± 0.12 mL		
		4. With heavy duty rim		
		5. Comes with stopper		
		a) Material of stopper :High density plastic (polyethylene)		
		b) With octagonal grip		
		c) Color of stopper: Any color		
		6. Must meet ASTM E- 694 for volumetric ware, ASTM E-542 for calibration of volumetric ware and ASTM E-288 for volumetric flasks.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		7. Calibrated "to contain" (marked "TC" or "IN")		
		8. Manufacturer should be accredited by NIST standards or its equivalent to the country of origin to certify that their items are calibrated.		
		9. Must be free from breakage, cracks, sharp rims and other defects		
		10. Packaging : Roll up glassware in newspaper and secure with a piece of masking tape and place in a bubble pouch and individually packed in a sturdy box		
		11. Comes with a brand marked permanently onto the item, with five (5) years existence in the glasswares industry		
		14. Must be brand new		
32	**Watch Glass, Ø 90 mm**	Functional Specifications: Used to:		
		a) cover glasswares like beakers		
		b) evaporates solvents in a sample and		
		c) holds/contains liquids and solids prior to heating.		
		Performance Specifications: Must be able to:		
		a) cover glasswares like beakers		
		b) evaporate solvents in a sample and		
		c) hold/contain liquids and solids prior to heating.		
		Design Specifications:		
		1.Shape : Circular concave		
		2. Material : Borosilicate, clear, transparent, and bubble-free glass with the following dimensions:		
		a) Diameter : 90-91 mm		
		b) Thickness range : 1.5 mm to 2.0 mm		
		3. Fire-polished rims/edges		
		4. Individually wrapped in used newspaper, enclosed in a bubble wrap, and packed in a sturdy box		
		5. Must have fire polished edges/rims, be free from breakage, cracks, chipped and sharp edges, surface irregularities including all other defects not stated herein		
		6. Comes with a brand marked permanently in the box with five years existence in the glasswares industry		
		7. Must be brand new		
33	**Water test kit**	Functional Specifications: Used to test the levels of 13 different elements, allowing identification of potential issues in water quality to correctly water treatment.		
		Performance Specifications: Must be able to test the levels of 13 different elements, allowing identification of potential issues in water quality to correctly prepare water treatment.		
		Design Specifications:		
		1. Tests for the following elements, a) coliform bacteria, b) nitrate, c) nitrite, d) hydrogen sulfide, e) total hardness, f) total alkalinity, g) total chlorine, h) free chlorine, i) copper, j) sulfate, k) iron, l) pH and m) lead, suitable for: fresh and potable water samples, including water from taps, wells, springs, boreholes, ponds, rain water as well as water stored in tanks.		
		2. Each kit contains the following:		
		1 x coliform bacteria test, with simultaneous E.coli detection		
		1 x lead test with presence/absence measured at a level of 15ppb (= 0.015 mg/l)		
		2x free & total chlorine, nitrate & nitrite, hardness, pH, total alkalinity, iron, copper, sulfate and hydrogen sulfide		
		With Detailed test instructions, colour chart as well as additional information including how to understand the test results.		
		3. Comes with a brand marked permanently onto the product label		
		4. Must be brand new		
LOT 6: SCIENCE DEVICES, INSTRUMENTS, AND MEASURING TOOLS - MATTER				

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
1	**Balance, Toploading, Electronic**	Functional Specifications: Used to measure an object's mass up to 500 g capacity accurate up to 0.01 g readability		
		Performance Specifications: Must be able to measure an object's mass up to 500 g capacity accurate up to 0.01 g readability to determine mass relationship in a chemical reaction		
		Design Specifications:		
		1. Type : Digital		
		2. Shape of pan : Rectangular		
		3. Material of pan : Stainless steel		
		4. Removable high strength stainless steel weighing platform		
		5. Load/Capacity : 500 g		
		6. Readability/Accuracy : 0.01 g		
		7. Repeatablity : 0.01 g		
		8. Comes with 500 g span calibration mass		
		9. Power Supply : 220-240V/ 50Hz		
		10. With large Liquid crystal display (LCD) with backlight		
		11. With multiple weighing units and overload protection		
		12. With automatic calibration		
		13. With standard RS 232 interface		
		14. Parts counting and percentage weighing		
		15. With accessories, such as:		
		a) the power cord,		
		b) AC Adapter and		
		c) 4 AA batteries		
		16. With Statement of Accuracy/ Certification of Accuracy latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		17. Comes with a **training video** that shows the actual equipment submitted and approved during the sample evaluation in a **USB** and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		18. Must be rust-free, free from dirt and breakage, cracks, chipped and sharp edges, other surface irregularities including all other defects not stated herein		
		19. Comes with a brand marked permanently onto the body of the item		
		20. Must be brand new		
2	**Balance, Triple Beam, with tare, 2610-gram**	Functional Specifications: To measure mass of solids, liquids and gases accurate up to 0.1 g readability		
		Performance Specifications: Must be able to measure mass of solids and liquids accurate up to 0.1 g readability to determine mass relationship in a chemical reaction		
		Design Specifications:		
		1. Features three graduated-tier beam with pan		
		2. Display : Easy to-read deep-notched, tiered beams and dial plates		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		3. Material of weighing pan: Stainless Steel		
		4. Shape of weighing pan: Circular		
		5. Pan size diameter : 150-151 mm		
		6. Material of base : Cast metal with corrosion resistant smooth finish		
		7. With **spring, loaded zero-adjust compensator**		
		8. With self-aligning agate bearings, precision ground steel knife edges		
		9. With magnetic dampening to minimize oscillation and speed weighing		
		10. With adjustment knob for taring		
		11. With iron stand assembly (stand rod and C clamp) for fastening on the table and suspending the triple beam balance on air for specific gravity determination		
		12. Maximum Capacity : 2610 grams		
		13. Accuracy : 0.10 gram readability		
		14. With three beam graduations:		
		a) Rear beam : 100 g X 10 g		
		b) Center beam : 500 g X 100 g		
		c) Front beam : 10 g X 0.1 g		
		15. Equipped with three separate masses/counterweights:		
		a) 2 pc 1,000 grams counter weights		
		b) 1-pc 500 grams counter weight		
		16. With Statement of Accuracy (Certificate of Traceability) indicating accuracy traceable to standards of the country of origin		
		17. With English User's manual that contains Operation guide and also indicates formula and procedure in determining specific gravity and taring.		
		18. Comes with a **training video** that shows the actual equipment submitted and approved during the sample evaluation in a **USB** and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		19. Must be free from rust and dirt, breakage, cracks, chipped and sharp edges, other surface irregularities including all other defects not stated herein		
		20. Enclosed in a polystyrene and packed in a sturdy box		
		21. Comes with a brand marked permanently onto the item and		
		22. Must be brand new		
3	**Calorimeter**	Functional Specifications: Used to measure heat effects or heat of reactions		
		Performance Specifications: a) Must be able to measure the heat effects or heat of reactions, the heat of neutralization of an acid and heat of fusion in the laboratory b) to distinguish between exothermic and endothermic processes		
		Design Specifications:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		1. Features a double-walled cylindrical double wall with air insulation between two polished spun vessels		
		2. Material : Two polished spun aluminum vessels with the following dimensions:		
		A) Outer vessel size:		
		a) Height :100-140 mm		
		b) Diameter : 65-115 mm		
		B) Inner vessel size :		
		a) Height: 72-89 mm		
		b) Diameter : 61-77 mm		
		3. The two are separated by a molded polystyrene insulated separator/insulating wall.		
		4. The outer vessel has a transparent plastic lid/molded Bakelite cover, and with hole for thermometer		
		5. Supplied complete with stirrer, but without thermometer.		
		6. Accessories:		
		a) With a plastic insulator ring or fiber washer for insulating and supporting one vessel within the other, protects the polystyrene insulation against damage and liquid spills.		
		b) Insulated Stirrer		
		c) A clear transparent molded cover or plastic lid with a filler cap, with two holes (one hole is for the rubber stopper that holds the thermometer and the other hole for the stirrer		
		d) Rubber stopper with one hole		
		e) With polystyrene/a fiber separator to insulate the inner vessel		
		7. With Instruction Manual in English that contains precise instructions on how to conduct common calorimetry experiments.		
		8. With User's Manual on the use, care, maintenance, trouble shooting and proper storage in English		
		9. With Activity Sheets/Teachers Manual in English		
		10. For numbers #7 to 9; technical specifications (a-e) must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		11. Must be free from rust and dirt, cracks, scratches, dented rims, sharp edges, surface irregularities including all other defects not stated herein		
		12. Comes with a brand printed permanently on the calorimeter/box		
		13. Must be brand new		
4	**Centrifuge**	Functional Specifications: Used as one of the separation techniques for mixtures and compounds when the density difference between the particles and liquid is great, the particles are large, and the liquid viscosity is low. Separates blood at 3300 rpm and can be slowed down to separate other fluids at lower G forces such as urine specimens		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Must be able to separate mixtures and compounds based on density difference between the particles and liquid is great, the particles are large, and the liquid viscosity is low. Separates blood at 3300 rpm and can be slowed down to separate other fluids at lower G forces such as urine specimens		
		Design Specifications:		
		1. Type : Fixed speed		
		2. Material: Non-toxic plastic, with the following dimensions:		
		a) Height : 241-266 mm		
		b)Width : 279-330 mm		
		c) Depth : 279-330 mm		
		d) **Certification from the manufacturer** of the **non-toxicity** of the material used		
		3. Color finish: Black		
		4. With Angled rotor, 8-Place Centrifuge with Timer		
		5. With Lid safety shut-off switch		
		6. Holds 3 mL to 15 mL size tubes		
		7. With 12 volt DC maintenance-free motor		
		8. Maximum volume : 120 mL (15 mL x 8)		
		9. Fuse : 3 amp/ 250 volts		
		10. Maximum speed : 3,500 rpm with fixed speed control. (blood, urine, etc.)		
		11.Clear view port in lid for using tachometer		
		12. Suction-cupped feet to prevent slipping		
		13. With Auto-off 30-minute timer with bell		
		14. With power cord		
		15. Power supply: 110/220 v , with auto-switching power adapter		
		16. Certification : CE, UL, cUL approved		
		17.Includes the folowing:		
		a). Eight-place tube rotor		
		b) Eight 15ml tube sleeves		
		c) Eight 13 x 75 mm tube sleeve inserts		
		d) Eight 15 mL round bottom plastic centrifuge tubes with screw cap with white or black print graduations		
		e) Eight 13 x 75mm round bottom plastic centrifuge tubes with screw cap		
		18. Placed in bubble wrap, enclosed in polystyrene and individually packed in sturdy box		
		19. With Operations Manual and Assembly Guide in English		
		20. With sample activity sheets in English		
		21. For numbers #19 to 20; technical specifications (a-e) must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0. 3 mm minimum thickness plastic laminated keycard that shall containthe actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		22. Comes with a **training video** that shows the actual equipment submitted and approved during the sample evaluation in a **USB** and shall contain the following: I. Training Video Contents: "a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment" II. Training Video details: "a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents)."		
		23. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, surface irregularities including all other defects not stated herein		
		24. Comes with a brand marked permanently onto the item		
		25. Must be brand new		
5	**Digital pocket thermometer**	Functional Specifications: Used to measure the temperature		
		Performance Specifications: Must measure the temperature , -20° to 110°C		
		Design Specifications:		
		1. Type : Digital pen type, pocket, compact, and easy to use		
		2. Features a small sealed tube that has a probe which fits its own case Over all length : 203-204 mm		
		Material of probe : Stainless steel		
		Length of probe : 107.95-122 mm		
		3. With own plastic/polycarbonate case		
		4. Field calibratable at any temperature		
		5. Waterproof		
		6. WIth Power : one 1.5-volt battery		
		7. With large, easy-to-read LCD display		
		8.Includes an on/off switch		
		9. F / ºC switchable button		
		10. With data hold button		
		11.With automatic shutoff after 10 minutes		
		12. Temperature Range: –50 to 200 ºC / –58 to 392 ºF		
		13. Resolution: 0.1 ºC / 0.2 ºF / 0.1° C or F from –19.9 to 199.9°, otherwise 1°		
		14. Accuracy: ±1 ºC / ±2 ºF over full range.		
		15. With Statement of Accuracy/ Certification of Accuracy latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		16. Must be free from breakage , cracks, chipped and sharp edges and surface irregularities including all other defects not stated herein.		
		17. Comes with a brand printed premanently onto the item		
		18. Must be brand new		
6	**Electrical Conductivity (Conductivity of Solutions) Apparatus**	Functional Specifications: Used as a visual demonstration of the electrical conductivity of various liquids/solutions.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Must be used as a visual demonstration of the electrical conductivity of various liquids/solutions whether it is an/a:		
		a) electrolyte - conducts electricity or		
		b) non-electrolyte - does not conduct electricity .		
		Design Specifications:		
		1. Shape : Cylindrical jar with flat bottom		
		2. Material of jar: Clear, transparent, smooth, and bubble free glass, with the following dimensions:		
		a) Diameter: 72-75 mm		
		b) Height : 75-80 mm		
		3. Capacity of jar/container: 150-200 mL		
		4. It comes with a jar cover which perfectly fits the glass jar		
		a) Material of jar cover: Plastic		
		b) Color of jar cover: Green/Any color		
		5.It consists of an electric lamp (3.0-4.0 V) in series with open electrodes		
		6. It comes with a plastic molded lamp socket		
		7. It comes with one (1) pc bulb		
		a) Type of bulb: Miniature type		
		b) Voltage: 3.0-4.0 volts		
		c) Number of extra light bulbs : Ten (10) pc		
		8.With two (2) binding posts color coded (black and red) for connection to two wire connectors.		
		9. With two (2) electrodes, which fit inside the glass jar, internally connected to the lamp circuit, namely:		
		a) a copper wire (anode) and		
		b) a carbon rod (cathode)		
		10. Length of electrodes : 60-80 mm		
		11. First power source: 2 AA batteries		
		12. With 1 pc battery holder		
		13. Comes with second power source: 220 V -240 V AC input)/ (0-12 V) DC output, comes with switch selector		
		14. Comes with:		
		a) two (2) connecting wires (1 red, 1 black) with alligator clips (1 red, 1 black) soldered on one end of the wire		
		b) Length of wire : 305-330 mm		
		c) Type of wire : Stranded		
		d) Gauge number : 20 - which is printed permanently on the insulation of the wire		
		15. Placed in bubble wrap, enclosed in polystyrene and comes complete with a padded box with storage slots for each item to help prevent glass breakage.		
		16. Must be free from breakage, cracks, chipped rims and sharp edges surface irregularities and other defects not stated herein		
		17. Must be able to show during an experiment on Electrical Conductivity of Solutions that electrolytes conduct electricity when the bulb lights up while non-electrolyte solutions did not conduct electricity when the bulb wont light up		
		18.With Operations Manual and Assembly Guide in English		
		19. With sample activity guide/sheets/Teacher's Manual in English		
		20. For numbers #18 to 19; the technical specifications a-e must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 3.0 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		21. Comes with a brand marked permanently onto the box		
		22. Must be brand new		
7	**Filter Paper, crepe, 580mm x 580 mm sheet, Grade 0905**	Functional Specifications: Used to filter/separate mixtures solids from liquids		
		Performance Specifications: Must be able to filter solids from liquids to demonstrate filtration, as one of the techniques in separating mixtures (solids from liquids)		
		Design Specifications:		
		1. Type: Technical use		
		2. Shape of filter paper : Square		
		3. Material: Cellulose with the following dimensions:		
		a) Length: 580-580.5 mm		
		b) Width : 580-580.5 mm		
		4. Color: White to cream		
		5. Surface: Creped, very coarse textured surface		
		6. Grade 0905		
		7. Initial Filtration Speed: 5 sec/10 mL		
		8. Flow rate : High		
		9. Packed in a brown filter paper tube		
		10.Must be free from dirt and all other surface imperfections including all other defects not stated herein		
		11. Comes with a brand marked permanently printed in the filter paper tube		
		12. Must be brand new		
8	**Gloves, Hand, super nitrile**	Functional Specifications: Used to protect hands against mechanical risks, microorganisms, chemical burns and splashes		
		Performance Specifications: Must be able to protect hands against mechanical risks, microrganisms, chemical burns and splashes		
		Design Specifications:		
		1. Features a slightly curved fingers and forward-facing thumb correspond to the natural position of the hand (hand-shaped)		
		2. Material : **Nitrile**, **reusable,** with the following dimensions:		
		a) Length of gloves : 330-360 mm		
		b)Thickness : 15 mil/0.38 mm minimum		
		The thickness must be measured from the cuff, palm and fingers		
		3. Color : Green		
		4. Size : 8/Medium		
		5. Interior finish (liner material) : Flocklined acid/solvent resistant)		
		6. Exterior finish : Embossed texture		
		7. Cuff style: Straight		
		8. Latex free to suit those with latex allergies		
		9. Non-slip wear resistant high elasticity , waterproof		
		10. Puncture resistant		
		11.With detailed imprints on each glove, on the following:		
		a) the glove size/s		
		b) the name of manufacturer		
		c) nitrile, flocklined		
		d) individual manufacturing lot		
		e) with pictograms for certification category requirements CE 0334 (EN 420, EN 388, EN 374) designed for protection against mechanical risks, chemical risks, and micro-organisms)		
		12. Individually packed in pairs in a resealable plastic bag		
		13 With a statement of conformity from the manufacturer that the gloves complies with the specifications currently published and has been subject to the strict quality conditions imposed by internal management systems.		
		14.Comes with a brand printed permanently onto the gloves		
		15. Must be brand new		
9	**Graduated Cylinder, borosilicate, 10 mL**	Functional Specifications: Used to measure and to deliver the volume of liquids		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Must be able to measure and to deliver the volume of liquids up to 10 mL capacity		
		Design Specifications:		
		1. Features a narrow cylindrical container with a small turned-out lip		
		2. Materia l: Borosilicate, clear, smooth,transparent and bubble-free glass		
		a)Thickness range : 1.3-1.4 mm		
		b) Outside diameter: 13-14 mm		
		c) Height: 177-178 mm		
		3. Features an easy-pour spout		
		4. With permanent white enamel graduations of approximate volumes, large white block letters,numbers and inscriptions/markings easy to read etched/engraved onto the glass, before the first graduation, which includes the following:		
		a) Manufacturer's name or trademark		
		b) Capacity: 10 mL		
		c) Graduations: 0.10		
		d) Class: A		
		e)) Tolerance : ± 0.10 - ±0.20		
		f) EX/TD g) ISO/ASTM/Certification/s latest issued by the concerned institution which must conform to the standards appropriate to the goods' country of origin. institution appropriate to the goods' country of origin.		
		h) 20°C-27°C		
		5. Single metric scale		
		a) Graduation Range : 1 to 10 mL		
		b) Graduation interval : 0.1 mL		
		6.With a hexagonal non-detachable glass base		
		7. With a bumper guard		
		8. With Statement of Accuracy (Certificate of Traceability) indicating accuracy traceable to standards of the country of origin		
		9. Placed in bubble wrap,and packed individually in a compartmentalized box		
		10. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		11. Comes with a brand marked permanently onto the glass		
		12. Must be brand new		
10	**Graduated Cylinder, borosilicate, 100 mL**	Functional Specifications: Used to measure and to deliver the volume of liquids		
		Performance Specifications: a) Must be able to measure and to deliver the volume of liquids up to 100 mL capacity b) Used as a container to determine the volume of irregularly shaped solids by water displacement		
		Design Specifications:		
		1. Features a narrow cylindrical container with a small turned-out lip		
		2. Material : Borosilicate, clear and transparent bubble-free glass with the following dimensions:		
		a)Thickness range : 1.3-1.4 mm		
		b)Outside diameter: 29-31 mm		
		c) Height: 254-256 mm		
		3. Features an easy-pour spout		
		4. With permanent white enamel graduations of approximate volumes, large white block letters,numbers and inscriptions/markings easy to read etched/engraved onto the glass, before the first graduation, which includes the following:		
		a) Manufacturer's name or trademark		
		b) Capacity: 100 mL		
		c) Graduations: 1 mL		
		d) Class A		
		e) Tolerance : ± 0.60 mL		
		f) EX/TD		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		g) ISO/ASTM/Certification/s latest issued by the concerned institution which must conform to the standards appropriate to the goods' country of origin.		
		h) 20°C		
		5. With single graduated metric scale		
		a)Graduation range : 5 to 100 mL		
		b) Graduation Interval : 1 mL		
		6. With plastic bumper guard		
		7. With a hexagonal non-detachable glass base		
		8. With Statement of Accuracy (Certificate of Traceability) or Certification of Accuracy atest issued by the concerned institution which must conform to the authoritative standards lappropriate to the goods's country of origin		
		9. Placed in bubble wrap,and packed individually in a compartmentalized box		
		10. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		11. Comes with a brand marked permanently onto the item		
		12. Must be brand new		
11	**Graduated pipette with rubber pipettor, borosilicate, 10 mL**	Functional Specifications: Used to measure the amount of liquid being dispensed/delivered/transferred to another containeraccurate up to 10 mL capacity		
		Performance Specifications: Must be able to measure the amount of liquid being dispensed/ delivered/transferred to another container accurate up to 10 mL capacity		
		Design Specifications:		
		1. Features a serological, transfer type straight tube with one constricted end		
		2. Material : Borosilicate, **reusable,** clear, transparent bubble-free glass		
		a) With **Certification from the manufacturer** that the graduated pipette is **reusable and not disposable**		
		3. With permanent colored enamel graduations of approximate volumes, large white block letters, numbers and inscriptions/markings easy to read etched/engraved onto the glass, before the first graduation, which includes the following:		
		a) Manufacturer's name or trademark		
		b) Capacity : 10 mL		
		c) Color band code for 10 mL cap :Orange		
		d) Graduation interval: 0.1 mL		
		e) Class A		
		f) Marked "TD" /Ex		
		g) Tolerance : ± 0.06		
		h) ISO/ASTM/Certification/s latest issued by the concerned institution which must conforms to the authoritative standards appropriate to the goods' country of origin.		
		i) 20°C		
		4. Graduated to tip, zero at top		
		5. Color code for 10 mL cap :Orange		
		6. Top end is constricted		
		7. Capacity: 10 mL		
		8. Graduation interval: 0.1 mL		
		9. Class A permanently marked on the glass		
		Tolerance ±0.06 mL		
		10. Graduations , approximate volumes, capacity, and other markings are in permanent amber stain which resists aggressive washing solutions		
		11. With **Statement of Accuracy/ Certification of Accuracy** latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		12. With a statement of conformity from the manufacturer that the product complies with the specifications currently published and has been subject to the strict quality conditions imposed by internal management systems.		
		13.Accessory :		
		With Rubber pipettor		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a) Typ : Three (3) -way Safety Bulb-type Pipet Filler with S, E and A letters embossed on the rubber		
		b) Material : Non-toxic natural rubber		
		c) Color : Red/orange		
		d) With pinch release valves that control air evacuation, liquid uptake, and liquid dispensing		
		e) Fits standard size pipettes		
		14. Packaging : Wrap glassware in newspaper and secure with a piece of masking tape and place in a bubble pouch, enclosed in polystyrene and packed in a sturdy box		
		15. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		16.Comes with a brand printed permanently on the glass		
		17. Must be brand new		
12	**Hydrometer for heavy liquids**	Functional Specifications: Used to measure relative density of heavy liquids based on the concept of buoyancy		
		Performance Specifications: Must be able to measure relative density of heavy liquids based on the concept of buoyancy, like glycerine		
		Design Specifications:		
		1. Type : Long Plain Form		
		2. Features a long cylindrical hollow glass tube with a bulb weighted at the pointed bottom with a steel ballast with graduations on the arrow stem for measuring.		
		3. Material : Clear , transparent bubble-free Glass, with the following dimensions:		
		a) Length : 300 - 330 mm		
		4. Specific Gravity Range: 1.00 - 2.00		
		5. Subdivision : 0.01		
		6. Comes with a ballast		
		a) Material of ballast : Glass		
		b) Heavy metals (lead, mercury)- free metal ballast		
		c) Material inside the ballast : Steel pellets and		
		d) With a binder		
		7. With Statement of Accuracy/ Certification of Accuracy latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		8. Individually serialized		
		9. Individually packed in a protective hard plastic case		
		10. With User's Manual in English		
		11. With Activity Sheets/Teacher's Manual in English		
		12.For numbers #10-11, the technical specifications (a-e) must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size: 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		13. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein.		
		14. Must have a brand etched/engraved onto the glass		
		15. Must be brand new		
13	**Hydrometer for light liquids**	Functional Specifications: Used to measure relative density of light liquids based on the concept of buoyancy like water		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Must be able to measure the relative density of liquids lighter than water based on the concept of buoyancy		
		Design Specifications:		
		1. Type : Long Plain Form		
		2. Shape : Long cylindrical hollow glass tube with a bulb weighted at the bottom with a steel ballast with graduations on the narrow stem for measuring		
		3. Material : Clear , transparent bubble-free Glass , with the following dimensions:		
		a)Total Length: 300 - 330 mm		
		b)Subdivision : 0.005		
		4. Specific Gravity Range : 0.70 to 1.0		
		5. Accuracy : ±1 subdivision		
		6. Comes with a ballast		
		a) With heavy metals (lead, mercury)- free metal ballast and glass		
		b) Material inside the ballast: Steel pellets and		
		c) With a binder		
		7. With Statement of Accuracy/ Certification of Accuracy latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		8. Individually serializedpacked in a protective hard plastic case		
		9. Individually packed in a protective hard plastic case		
		10. With User's Manual in English		
		11. With Activity Sheets/Teacher's Manual in ENglish		
		12.For numbers #10-11; the technical specifications (a-e) must be strictly followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		13. Must be free from breakage, cracks, scratches, chipped rims, sharp edges, striae, surface irregularities including all other defects not stated herein		
		14. With a brand etched/printed onto the item		
		15. Must be brand new		
14	**Laboratory Hot Plate with magnetic stirrer**	Functional Specifications: a)Used to heat samples, glasswares and its contents, solutions, and substances uniformly with constant stirring , or		
		b) boiling of water		
		c) to sterilize glasswares and other materials uniformly,		
		d) dissolving buffers and reagents with constant stirring		
		e) preparing media,		
		f) concentrating samples and		
		g) to prepare chemicals used in scientific research.		
		Performance Specifications: Must be able to		
		a) heat samples, glasswares and its contents, solutions, and substances with constant stirring		
		b) boiling of water		
		c) to sterilize glasswares and other materials uniformly		
		d) dissolving buffers and reagents with constant striring		
		e) preparing media,		
		f) concentrating samples and		
		g) to prepare chemicals used in scientific research		
		h) Agitates the liquid to speed up the reaction and mixes components (solid and liquid to get homogeneous mixtures		
		Design Specifications:		
		1. Type : Digital		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2. Top plate material : Ceramic coated aluminum plate (chemical-acid-base resistant)with the following dimensions:		
		a) Length : 178-220 mm		
		b) Width: 178-220 mm		
		3. Color of top plate : White		
		4. Color of body: Midnight blue/any color		
		5. Comes with temperature probe, probe holder, support rod, and stir bar a) With accurate internal temperature sensor and external temperature probe b) With plug/holder/ clamp/clip for temperature probe c) With built-in support rod mount, thumbscrew, accommodates rods up to 13 mm in dia. d) With Stand rod with the following dimensions: i) Material: Stainless steel ii) Diameter (Φ):12-14 mm iii) Length: Φ450-452 mm iv) With PTFE Cross Spinplus magnetic stirrer bar Dimensions: 1 x 9/16 inches (25.4 x 14.3 mm) Color: White		
		6.Maximum Operating Temp.: 380 ^{O}C minimum		
		7. Temperature accuracy : ± 0.3 °C at set temperature		
		8. Stirring capacity : 5-20 Liters		
		9. Speed : 80-1500 rpm		
		10. Control resolution : 5 rpm		
		11. Temperature range and accuracy : Max 380 °C minimum		
		12. Heating power consumption : 600 W minimum		
		13. With digital LCD with backlight display		
		14. With digital feedback controller with joggle shuttle switch(Turn + Push)		
		15. With over temperature protection		
		16. With power cord, AC AdapterQuick and easy adjustment knob		
		17. Control: Quick and easy adjustment knob		
		18. With safety LEDs to indicate when heating function has been activated		
		19. Power: 220-240 V AC, 50/60 Hz, 800 W minimum		
		20. With built-in support rod mount, thumbscrew, accommodates rods up to 13 mm in dia.		
		21. With quick adjustment knob and LED indicator		
		22. Includes English User's Manual which consists of the Operating Manual		
		23.With Activity Sheets/Teacher's Manual in English		
		24.For numbers #22-23; the technical specifications (a-e) must be strictly followed:		
		a) For Contents/ List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 minimum thickness plastic laminated Assembly Guides that shall containthe actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size: A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size: 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		25. Must be free from breakage, cracks , chipped rims, sharp edges, all urface irregularities and all other defects not stated herein		
		26. Must be packed in polystyrene and enclosed in a sturdy box		
		27. Comes with a **training video** that shows the actual equipment submitted and approved during the sample evaluation in a **USB** and shall contain the following:		
		I. Training Video Contents:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		28. Comes with a brand marked permanently on the item		
		29. Must be brand new		
15	**pH meter, hand-held, digital**	Functional Specifications: To measure the pH of a substance or solution indicating its acidity , being neutral,or its basicity/alkalinity in 0.1 pH readability		
		Performance Specifications: Must be able to measure the pH of each substance/solution in 0.1 pH readability, :		
		a) For an acid : pH 0- pH 6.0		
		b) For basic/alkaline : pH 8.0 to pH 14.0.		
		c) For neutral (distilled water) : pH 7.0		
		Design Specifications:		
		1. Type: Portable hand held digital pen type		
		2. Material : Plastic with the following dimensions :		
		a) Length : 6.2 in (155.45 mm) (min)		
		b) Width : 1.5 in (38.1 mm) (min)		
		c) Height : 1.3 in (33.02 mm) (min)		
		3. With retractable electrode		
		4.Comes with one (1) pc protective cap		
		5. Electrodes extend up to 3.15” (80.01 mm) (min)		
		6. Waterproof		
		7. pH range: pH 0 to pH 14		
		8. Accuracy: ± 0.2 pH		
		9.Features a bold LCD display of pH		
		10. With automatic temperature compensation		
		11. Supplied with accessories:		
		a) One (1) bottle pH 7.0 buffer solution Capacity of pH 7.0 buffer solution : 50 mL		
		b) With one (1) pc calibration screwdriver		
		c) One (1) pc 9V battery		
		d) Packed in hard plastic carry case		
		12. Manufacturer should be accredited by NIST standards or its equivalent to the country of origin to certify that their items are calibrated.		
		13. With User's Manual in English		
		14. With Student Worksheets/Teacher's Manual in English		
		15. For numbers 13-14, the following technical specifications from a-e must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Teacher's Guide, StudentWorksheets, Instruction		
		Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) In ten (10) mil laminated keycard that shall containthe actual colored picture of the model including the name: labeled with the required parts with details as follows		
		i) Paper Size: A4 size , 80 gsm		
		ii) Font: Times New Roman		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		iii) Font size: 12		
		iv) Orientation:Portrait		
		v) Margins on all sides with 2 point width border line		
		vi) Line with arrow head of 1.25 point with width shall point to the specifi part being labeled		
		16. Must be free from sharp edges		
		17. Must have a brand permanently marked on the item		
16	**Safety Goggles, polycarbonate**	Functional Specifications: Used to protect eyes and face against chemical burns and splashes		
		Performance Specifications: Must be able to protect eyes and face against chemical burns and splashes		
		Design Specifications:		
		1 Features an angled vented portion that does not allow direct straight line from the exterior to the interior of the eyewear which encloses wide area surrounding the eyes		
		2. Material of lens : Polycarbonate lens		
		3. Color of the lens: Clear		
		4. Lens type : Anti-splash, anti-fog treated/anti-scratch coating		
		5. With indirect ventilation channels (preventing penetration of splashes) one through each side of the frame to keep out large particles, dust, and liquids and splash hazards, improves air circulation and reduces fogging in hot/humid conditions		
		6. With wrap around elasticized adjustable headband integrated with goggle frame to prevent slippage and holds the goggle more securely		
		7. With pivoting headband clips to adjust strap around hard hats or hearing protection		
		8. Peel-off goggle covers available to extend the life of the lens		
		9. Can be worn over most prescription eyewear (OTG compatible)		
		10. With firm comfortable seal around forehead, cheeks, nose and temples protects against chemicals, dust and grindings		
		11. Shall bear mark ANZI Z87.1-2010 Standard for Chemical Splash and Dust Protection, Z87+D3 to indicate an impact protector type (ANSI Z87.1, CE EN 166 or CSA Z94.3 certification compliance) on the frame and the lens		
		12. The manufacturer or supplier certification mark must be present on all approved safety lenses, frames (front and temple), removable side shields, and other parts of the glasses, or goggles.		
		13. Individually packed in a transparent plastic bag		
		14. Labeling of the primary packaging displays, product name, product reference, manufacturer name, size, type, performance testing information for particular storage conditions (temperature, pressure, light, humidity, as appropriate or harmonized symbol as applicable.		
		15. With issuance of certification statement from the manufacturer as to the:		
		a) Non-toxicity of the materials used		
		b) Material of the lens : polycarbonate		
		c) It is fog coated/scratch and impact resistant		
		16. Individually packed in a sturdy box/plastci bag		
		17. Must be free from cracks, sharp edges, and all other surface imperfections including all other defects not stated herein		
		18. Comes with a brand marked permanently on the item/box		
		19. Must be brand new		
17	**Thermometer, Laboratory type, Alcohol, -20ºC to 110ºC**	Functional Specifications: Used to measure the temperature		
		Performance Specifications: Must measure the temperature , -20° to 110°C		
		Design Specifications:		
		1. Type : Alcohol filled, partial immersion thermometer		
		2. Features a small sealed tube made of glass that has a small hollow bulb filled partly with ethanol and partly with nitrogen and ethanol vapors on one end and a thin capillary opening running through the length of its center		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		3. Material : Glass		
		4. Color : White/yellow		
		5. Non-toxic red-filled thermometer		
		6. Partial immersion type with immersion line indicator and ring top		
		7. With precision red alcohol-filled, reinforced bulbs, and with expansion chamber		
		8. With white back with non-roll sleeve		
		9. With clear and permanent markings; scale never washes out		
		10. Provided with non-roll plastic case		
		11. With continuous alcohol column with no separations		
		12. All graduation lines, figures, and letters should be clear-cut, distinct, and filled with a permanent pigment of suitable color with the following dimensions:		
		a) Length : 200 mm (min)		
		b). Accuracy: ± 1° C		
		c) Range : -20°C to 110°C		
		d) Division: 1°C		
		e) Diameter: 5.8 to 6.2 mm f) Immersion line: 76 mm		
		13. With Statement of Accuracy/ Certification of Accuracy latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		14. Must be free from breakage , cracks, chipped and sharp edges and surface irregularities including all other defects not stated herein.		
		15. Comes with a brand printed premanently onto the glass		
		16. Must be brand new		
18	**Universal pH indicator**	Functional Specifications: Used as an indicator to determine/measure the pH of substances, whether it is an acid, neutral or a base		
		Performance Specifications: Must be used as an indicator to effect a color change when it is dipped into the different substances to determine/measure the pH of each, through comparison with the pH color chart provided, which corresponds to:		
		a) For an acid : pH 0-pH 6;		
		b) For a base : pH 8-pH 14.		
		c) For distilled water : pH 7		
		Design Specifications:		
		1. Type: Test strips		
		2. Shape: Rectangle		
		3. Material: Cellulose/Paper based		
		4. Dimension of pH strip :		
		a) Length : 69 mm x 6 mm		
		5. Number of colors in indicator test strip: In four colors to test pH values		
		6. Number of test strips : 100 pc strips		
		7. Packaging: Clear, transparent box		
		8. Shape of box: Square		
		9. With complete color chart for comparison with the color change to get the pH reading of the sample being tested		
		10. No sharp edges on box		
		11. Measures pH 0-pH 14		
		12. Comes with a brand		
19	**Water Quality Meter/Tester 5 in 1 (TDS/ pH/EC/ salinity/ temperature)**	Functional Specifications: Used to measure the total dissolved solids, pH, EC, salinity and temperature to check quality of water		
		Performance Specifications: Must be able to measure the TDS/total dissolved solids, pH, EC, salinity and temperature to check quality of water		
		Design Specifications:		
		1. Type : Digital pen type, pocket, compact, and easy to use		
		2. Features a small sealed tube that has a replaceable probe which fits its		
		own protective case		
		Material: ABS (plastic) with the following dimensions:		
		Height: 180-185 mm		
		L=37- 39 mm		
		W= 37-39 mm		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Screen display size: 33 x 24 mm		
		3. With automatic buffer recognition and with 3 standard pH buffer		
		powder provided		
		a) pH 6.86 @ 25℃		
		b) pH 4.0 @ 25℃		
		c) 9.18 @ 25℃		
		3. With battery: 3 pc G13-A CNB lithium 1.5V batteries (included) /(LR44)		
		4. With three push buttons for		
		a) Power		
		b) HOLD/TEMP key to lock the measured value and take it out for		
		viewing, which is really simple.		
		c) Mode/calibration key		
		5. Waterproof level: IP67		
		6. Can detect the salinity of edible salt and the salinity of seawater. Food salinity measuring range: 0.00-25.00%, seawater salinity measuring range: 10.1-200.0pp		
		7. With automatic power-off function which turns off the power after 5 minutes without any operation to save power.		
		8. With large screen display, backlight and fully transparent liquid crystal (LCD) that helps you clearly see the measurement in any case to display 4-digit values and the corresponding physical quantity units.		
		9. With automatic temperature compensation.Temperature can affect reading levels, has an even better range of 0 °C-60 °C (32 °F-140 °F), to ensure that you are getting the best reading, so you can test with confidence in any environment		
		10. With the following parameters:		
		a)EC Measuring range: 0 to10000uS/cm		
		10.01-19.99ms		
		20.1-400mS/cm		
		Support 3-point calibration automatic identification (1413us 12.88ms and 111.8ms)		
		Built-in 3 calibration points (1413uS/cm 12.88ms/cm 111.8ms/cm)		
		Resolution: 1 uS/cm; 0.1 mS/cm;		
		Accuracy: ±2% F.S. of reading		
		b) TDS Measuring range: 0 to 1000ppm		
		1000ppm to 10000ppm		
		10.1 to 200.0ppt (convert range automatically)		
		Resolution: 1ppm;; 0.1ppt		
		Accuracy: ±2% of F. S. reading		
		c) Salinity Measuring range: 0.00 to 25.00%		
		10.1-200 .00 ppt		
		Resolution: 0.01%		
		Accuracy: 0.01-5.00% (±0.1%) 5.10-25.00% (±1%)		
		d) pH Measuring range: 0.01-14.00pH		
		Resolution: 0.01pH		
		Accuracy: ±0.05pH		
		Calibration:		
		Automatic calibration		
		Conductivity EC: Supports 3-point calibration automatic identification (1413us 12.88ms and 111.8ms) with 3 calibration points (1413uS/cm 12.88mS/cm 111.8mS/cm)		
		pH: Recognize standard solution automatically...6.86/4.00/9.18		
		If the meter cant identify the solution, the electrode is broken		
		Temperature compensation: ATC 0-60 ℃		
		Operation environment:0-60℃/32.0-140℉); RH 100%		
		TDS Factor: 0.4 to 1.0)		
		e) Temperature range: 0.1-60.0℃/ 32.0-140℉		
		Temperature resolution: 0.1 ℃/℉		
		Temperature accuracy: ±0.5 ℃		
		11. Battery: Three G13-A CNB lithium 1.5V batteries (included)		
		19. With hard carrying case		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		15. With Statement of Accuracy/ Certification of Accuracy latest issued by the concerned institution which must conform to the authoritative standards appropriate to the goods' country of origin		
		16. Must be free from breakage , cracks, chipped and sharp edges and surface irregularities including all other defects not stated herein.		
		17. Comes with a brand printed premanently onto the item		
		18. Must be brand new		
LOT 7: SCIENCE DEVICES, INSTRUMENTS, AND MEASURING TOOLS - EARTH & SPACE and LIVING THINGS				
1	**Anemometer with Wind Vane, Cup type**	Functional Specifications: Used to measure wind speed in real time and indicate the direction where the wind is coming from and where it is heading		
		Performance Specifications: Should be able to measure wind speed in real time and indicate the direction where the wind is coming from and where it is heading		
		Design Specifications:		
		1. Anemometer and wind vane combined in 1 unit		
		2. Dimension of unit : 340-350 mm x 75-80 mm x 75-80 mm (H x W x D)		
		3. Powered by AA dry cells		
		4. Direct digital reading of wind speed, can display wind speed in m/s and km/hr, can measure average wind speed and instantaneous wind speed by means of selector switch		
		5. Wind vane should be free moving to indicate wind direction, wind vane should have arrow head on one end and arrow tail on the other end		
		6. Made of corrosion resistant material		
		7. All labels, inscriptions, and instructions should be in English		
		8. The item should be free from toxic materials		
		9. The item should be branded and permanently marked on the item		
2	**Barometer-Thermometer-Humidity (3-in-1 Analog Instrument)**	Functional Specifications: Used to measure simultaneously the prevailing local: atmospheric pressure, air temperature, relative humidity Performance Specifications: Should be able to measure simultaneously the prevailing local: atmospheric pressure, air temperature, relative humidity		
		Design Specifications:		
		1. Main scale: Barometer scale analog:		
		Dial Diameter: 98 mm - 135 mm; Depth: 20-30 mm		
		Should have millibar (mbar) or hecto pascal (hPa) scale with range of 960 to 1060 mbar or hPa, at 1 mbar or 1 hPa graduations		
		Materials: plastic or metal body casing, clear transparent cover		
		With adjustment screw/knob		
		2. Secondary and tertiary analog scales for temperature and humidity		
		Dial diameter for temperature and humidity: 20-25 mm		
		3. Temperature scale range: -30-60 °C, 1°C graduations, analog		
		4. Humidity scale range 0-100%, 1% or 2% graduations, analog		
3	**Compass, Magnetic**	Functional Specifications: Used to find direction on the earth's surface by the alignment of the compass needle with the earth's magnetic field		
		Performance Specifications: Should be able to find direction on the earth's surface by the alignment of the compass needle with the earth's magnetic field		
		Design Specifications:		
		1. Outside Diameter: 48-50 mm		
		2. Needle mounted in an Aluminum case with clear, scratch-free plastic or glass face		
		3. Graduated dial marked in cardinal points (North, South, West, East, Northwest, Northeast, Southwest, and Southeast).		
		4. Must be branded and permanently marked on the item		
4	**Dissecting Set with pan**	Functional Specifications: Used to perform a wide variety of dissections.		
		Performance Specifications: Must be able to aid in classifying different animal tissues during dissection.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Design Specifications:		
		1. 10 pc dissecting set that includes the following stainless steel instruments:		
		• 1 piece surgical scissors, 110mm minimum length		
		• 1 piece fine point/iris scissors,110mm minimum length		
		• 1 piece fine point curved forcep, 110mm minimum length		
		• 1 piece fine point straight tip forcep, 110mm minimum length		
		• 1-piece mosquito forcep, curved tip		
		• 1-piece scalpel minimum 4 cm blade length		
		• 1-piece scalpel handle		
		• 1-piece teasing needle angular with chuck		
		• 1-piece teasing needle straight with chuck		
		• 1-piece mall probe and seeker		
		2. In a rectangular vinyl zippered case;		
		3. With 1-piece stainless steel dissecting pan (minimum): 254 mm x 178 mm x 38 mm		
		4. "Stainless steel" shall be embossed or engraved on the items whenever applicable.		
		5. Must be branded and brand new. The brand shall be printed on vinyl zippered case.		
5	**Gloves, Surgical**	Functional Specifications: Used to protect hands from dirt and contamination.		
		Performance Specifications: Must be able to protect hands against dirt, laceration and contamination.		
		Design Specifications:		
		1. Sterile, latex surgical gloves		
		2. Smooth, powder-free and beaded cuff		
		3. Color: White or beige		
		4. Size range: Medium - Large		
		5. Individually sealed pack pair of gloves with brand and type of material printed on it.		
		6. Must be branded and brand new.		
6	**Hand Lens, 10x magnification**	Functional Specifications: Used for enlarging the appearance of objects 10 times its actual size		
		Performance Specifications: Should be able to enlarge the appearance of objects 10 times its actual size		
		Design Specifications:		
		1. Magnification: x 10		
		2. Diameter (viewable area) 18-20 mm		
		3. Body: Stainless steel;		
7	**Hand Lens, 5x magnification**	Functional Specifications: Used to produce a magnified image of an object.		
		Performance Specifications: Must be able to magnify the image of an object.		
		Design Specifications:		
		1. Five times (5x) magnification power		
		2. Glass lens; diameter range: 45mm - 50 mm		
		3. Mounted in a circular chrome-plated metal frame with a cylindrical handle		
		4. No sharp edges and other defects		
		5. Safely packed in a box		
		6. Must be branded and brand new. The brand shall be printed on the box.		
		Performance Specifications: Must be able to clean the microscope lenses.		
		Design Specifications:		
		1. Measures (minimum): 100 mm x 150 mm		
		2. Material: Fine, soft, lint-free paper		
		3. Quantity: 50 sheets/booklet		
		4. Must be packed in a resealable plastic		
		5. Must be branded and brand new. The brand shall be printed on the cover of the booklet.		
		Performance Specifications: Must be able to focus specimen not visible to the naked eye using the four objectives.		
		Design Specifications:		
		1. Eyepiece: Glass lens, locked-in wide field, 10X with pointer, and with own separate plastic storage case includes an extra 15X eyepiece		
		2. Nosepiece: Quadruple with accurate centering and click stops; easy to turn		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		3. Objectives: With metal casing, glass lens, DIN achromatic objectives are parfocal, par centered, color coded, 4x,10x; retractable 40x, and 100x (oil immersion) with own separate plastic storage case		
		4. Stage: Built in flat, firmly fixed graduated mechanical stage clips and with knobs; minimum 110 mm x 110 mm ; glass slides shall not be displaced when mounted		
		5. Condenser: N.A. 1.25 with iris diaphragm		
		6. Focus: Dual coarse controls with slip clutch and adjustable tension ring; dual lever type fine focus controls; adjustable safety stop. Gives sharp, clear, well-lighted images		
		7. Mirror range: 49mm - 51 mm, 2-sided, plane-concave		
		8. No sharp metal parts and other defects		
		9. With wooden storage case; and immersion oil provided		
		10. With English User's Manual that shall provide the diagram of correct microscope parts; function of each part; operation guide; cleaning and troubleshooting instructions.		
		11. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size: (minimum) 165 mm x 215 mm Fold		
		(minimum) 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		12. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Maintenance of the equipment e. Troubleshooting f. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		13. Warranty on parts and labor: 2 years		
		14. Must be branded and brand new. The brand shall be permanently mark on the item.		
8	**Microscope, Digital**	Functional Specifications: Used to focus specimen with the image viewed through the LCD screen.		
		Performance Specifications: Must be able to show the structure of subcellular organelles.		
		Design Specifications:		
		1. Nosepiece: Triple with 4x, 10x, 40x achromatic objectives and click stop		
		2. Magnification: 40x, 100x, and 400x (1600x with digital zoom)		
		3. Has full color (minimum) 3.5" TFT LCD screen with onboard software		
		4. Digital Camera: 5 MP CMOS sensor (minimum) as indicated in the manufacturer's manual		
		5. With built-in top and bottom LED illumination sources		
		6. 220V; 50/60 Hz power source		
		7. Battery options 4AA		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		8. Stage: (minimum) 88 mm x 88 mm; fully mechanical with metal clips;		
		9. Six position filter wheel		
		10. With 180° rotating LCD screen		
		11. Combination of smooth-finished metal and plastic parts		
		12. Supports up to 32G Memory size		
		13. AC Plug (power) SD Card (32G max) Port(s) In		
		14. With TV/AV output for display on large monitors for classroom or at the laboratory		
		15. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Maintenance of the equipment e. Troubleshooting f. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		16. Warranty on parts and labor: 2 years		
		17. With English User's Manual that shall provide the diagram of correct microscope parts; function of each part; operation guide; cleaning and troubleshooting instructions.		
		18. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size: (minimum) 165 mm x 215 mm Fold		
		(minimum) 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		19. Accessories included:		
		a. 2GB SD card / 2GB micro SD card		
		b. USB 2.0 Cable (data transfer)		
		c. Dust Cover		
		d. Rugged canvass carrying case with shoulder strap		
		e. Five (5) prepared slides		
		f. 4 Plug international AC adapter		
		g. AV out cable for viewing on a TV or projector		
		20. Must be branded and brand new. The brand shall be permanently mark on the item.		
9	**Pipette, Beral, 1 mL**	Functional Specifications: Used to transfer/dispense liquid samples.		
		Performance Specifications: Must be able to transfer/dispense liquid sample up to a volume of 1 mL.		
		Design Specifications:		
		1. One-piece pipette, made from flexible soft non-toxic plastic that has a protuberance on top that serves as liquid retention chamber (Certificate of non-toxicity is required)		
		2. Capacity: 1 mL in 0.25 mL grad interval		
		3. No rubber head		
		4. Total length (minimum): 140 mm		
		5. With molded (embossed) graduations		
		6. Must be brand new		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Must be able to show the specimen when viewed under a microscope.		
		Design Specifications:		
		1. Quantity: Set of 25 pieces glass slides		
		2. Dimensions (Width x Length) minimum: 25 mm x 75 mm		
		3. Thickness (minimum) : 1.0 mm		
		4. Individually sealed and protected by a cover slip/glass cover;		
		5. Clear, distinct and colorful slides of the following: insects (4); plants (7); animals/microbes (7); Human tissues (7)		
		6. Either of the following insects: wing of housefly, mosquito larvae, Drosophila melanogaster, housefly head, aphids.		
		7. Either of the following plants: Volvox, stem of monocotyledon c.s, stem of dicotyledon c.s., monocot leaf epidermis, dicot leaf epidermis, germinated pollen, Hydrilla leaf w.m., onion epidermis w.m.		
		8. Either of the following animals/microbes: Hydra budding, Euglena, diatoms, Daphnia w.m., Amoeba proteus, Paramecium w.m., Planaria w.m., Planaria c.s., Ascaris mitosis, Vorticella, lancelet w.m., Escherichia coli, Staphyloccocus aureus, Lactobacillus spp.		
		9. Either of the following human tissues: skeletal muscle c.s., small intestine c.s., human white blood cell, cardiac muscle; motor neurons cell w.m., spinal cord c.s., lung section, liver section, nerve cell w.m., meiosis of human sex cells, stomach villi		
		10. Writing the scientific name with correct spelling shall be properly observed.		
		11. Individually and permanently labeled for specimen identification.		
		12. Slides are packed in a fitted plastic storage box that contains interior padding to avoid breakage; with a numbered list that coincides with the arrangement of the specimens being stored.		
		13. No finger-smudged and no chipped edges slide		
		14. Includes instructions on how to clean and properly store the slide in a matte paper minimum 105 mm x 140 mm, Font style: Arial, Font size(minimum): 10, written in American English.		
		15. Must be branded and brand new. The brand shall be permanently marked on the storage box.		
		Performance Specifications: Must be able to compare mitosis and meiosis, and their role in the cell-division cycle.		
		Design Specifications:		
		1. A set of 6 rectangular microscope glass slides with polished edges; with clear and distinct sample specimen.		
		a. Ascaris megalocephala embryology. Sec. of uteri showing maturation stages (meiosis). Polar bodies can be seen.		
		b. Giant chromosomes, smear from salivary gland of Chironomus, carefully fixed and stained		
		c. Lilium, anther t.s., microspore mother cells showing telophase of first and prophase of second (homeotypic) division		
		d. Meiotic and mitotic stages in sec. of Salamandra testis. Many meiotic and mitotic stages can be observed.		
		e. Mitosis, l.s. from Allium root tips showing all stages of plant mitosis carefully stained with iron-hematoxyline		
		f. Mitotic stages in sec. through red bone marrow of mammal		
		2. Dimensions (Width x Length) minimum: 25 mm x 75 mm		
		3. Thickness (minimum): 1.0 mm		
		4. Individually sealed and protected by a cover slip/glass cover;		
		5. Each slide is permanently labeled for specimen identification;		
		6. Writing the scientific name with correct spelling shall be properly observed;		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		7. Slides are packed in a fitted plastic storage box that contains interior padding to avoid breakage; with a numbered list that coincides with the arrangement of the specimens being stored.		
		8. No finger-smudged and no chipped edges slide		
		9. Includes instructions on how to clean and properly store the slide in a matt paper (minimum 105 mm x 140 mm), Font style: Arial, Font size(minimum): 10, written in American English.		
		10. Must be branded and brand new. The brand shall be permanently marked on the storage box.		
10	**Protein Synthesis Demonstration Set**	Functional Specifications: Used to demonstrate the synthesis of protein.		
		Performance Specifications: Must be able to illustrate the synthesis of protein using information from DNA.		
		Design Specifications:		
		1. Contains 33 pieces of reusable, non-toxic plastic (certificate of non-toxicity is required), magnetic, and colorful teacher manipulatives (large DNA, mRNA, ribosome, tRNA, and amino acid models)		
		2. A 3' -5' DNA sense strand and a linear 5'-3' DNA anti-sense strand		
		3. With 180 student manipulatives (smaller size models) where students can manipulate on their tables		
		4. With teachers key for easy verification		
		5. With instructional video on the use in USB		
		6. Safely packed in a box		
		7. With English User's manual that shall provide assessment questions in the identification of a resulting amino acid sequence from a unique DNA sequence.		
		8. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size (minimum): 165 mm x 215 mm Fold		
		(minimum): 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		9. Packing dimensions (minimum):72 cm L x 34 cm W x 9 cm T		
		10. Must be branded and brand new. The brand shall be printed on the box.		
11	**Rain Gauge**	Functional Specifications: Used to measure the amount of rainfall at a certain period		
		Performance Specifications: Should be able to measure the amount of rainfall at a certain period		
		1. Made of clear and transparent plastic; thickness: 2-3 mm		
		2. Permanently marked accurate scale at 1 mm or 2 mm graduations		
		3. Maximum measuring graduation at least 150 mm		
		4. Straight or tapered type design		
		5. Comes with mounting bracket for mounting onto post		
		6. Must have packaging		
12	**Reaction Plates with 6 Wells**	Functional Specifications: Used to contain small amount of samples of specimens under study		
		Performance Specifications: Should be able to contain small amount of samples of specimens under study		
		Design Specifications:		
		1. Made of clear, non-toxic plastic material that is free from sharp edges.		
		2. Plate Shape: Rectangular		
		3. Plate Length: 110-120mm		
		4. Plate Width: 85-100mm		
		5. Six Well per Plate		
		6. Well Shape: Circular/ Round		
		7. Well diameter: 30-35 mm		
		8. Well deep: 6-8mm		
		9. Well capacity: 1.6 mL -2.0mL		
		10. Used for soil and water testing		
		11. Must be branded and permanently marked on the item		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
13	**Sedimentator Tube**	Functional Specifications: Used to demonstrate how soil sediments settle in water		
		Performance Specifications: Should be able to demonstrate how soil sediments settle in water		
		Design Specifications:		
		1. 10 1/2 inches - 12 inches height with a diameter of 1 - 1 1/2 inches		
		2. Sealed and leak free		
		3. The body made of clear, transparent plastic tube.		
		4. With different sediment and crystal clear water.		
		5. Functions:		
		a. Use for observing movement, deposition, and layering of sediments and organic materials.		
		b. Observations apply to sedimentary rock formation and fossil formation		
		6. With English User's Manual that includes		
		a. operation guide.		
		b. Guide on how to use		
		c. Student Activity Sheets		
		7. Brand must be permanently marked on the item.		
14	**Soil pH, Moisture, Sunlight Meter**	Functional Specifications: Used to measure pH, moisture content of soil and measure sunlight available to the soil sample in real time		
		Performance Specifications: Should be able to measure pH, moisture content of soil and measure sunlight available to the soil sample in real time		
		Design Specifications:		
		1. Compose of two electrodes, 7 inches -10 inches long		
		2. pH/ Moisture/ Sunlight Switch		
		3. pH Range: 3.5 - 8 pH (3.5-6.5 Acidic, 7-8 Alkaline)		
		4. Moisture Range: 1-10 (1-3 Dry; 4-6 Normal; and 7-10 Wet)		
		5. Light Range: 0 - 2000 lux (0-200 Low, 200-500 Low+, 500-1000 Normal, and 1000-2000 High)		
		6. With English User's Manual that includes:		
		a. Operation Guide		
		b. Procedure on the proper use, handling and storage.		
		c. Student Activity in using the item.		
		7. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		8. Brand must be permanently marked on the item.		
15	**Soil/Test Sieve**	Functional Specifications: Used to separate and segragate different size soil particles		
		Performance Specifications: Should be able to separate and segragate different size soil particles		
		Design Specifications:		
		1. Diameter range: 8 inches - 10 inches		
		2. Mesh sizes: 5 Mesh, 10 mesh, 35 Mesh, 60 mesh, 120 mesh, and 230 mesh		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		3. Made of stainless steel metal		
		4. Set of Six Sieves		
		5. Includes lid and catch pan		
		6. Must be branded and permanently marked on the item		
16	**Tong, Beaker**	Functional Specifications: Used to hold heated beakers.		
		Performance Specifications: Must be able to secure hot beakers.		
		Design Specifications:		
		1. Scissor-like tool with plastic-coated jaws		
		2. Made of minimum 6.0 mm smooth finish chrome-plated steel		
		3. With flat riveted joint		
		4. Total length (minimum) : 254 mm		
		5. Holds beakers from 50mL to 1000 mL		
		6. Safely packed in a box		
		7. Must be branded and brand new. The brand shall be printed on the box.		
17	**Wash bottle, plastic, 250 mL**	Functional Specifications: Used to store and dispense water for diluting solutions, washing precipitates and rinsing glass wares.		
		Performance Specifications: Must be able to store and dispenses water in diluting, washing precipitates and rinsing activities.		
		Design Specifications:		
		1. Translucent and non-toxic plastic material (Certificate of non-toxicity is required)		
		2. Cylindrical body shape		
		3. Easy squeeze dispensing; no leaks		
		4. Capacity: 250 mL.		
		5. Screw type closure with its angled stem and draw tube molded in one piece		
		6. Must be brand new.		
LOT 8: MATHEMATICAL MANIPULATIVES				
		Performance Specifications: Must be able to represent mathematical expressions and equations to introduce and foster algebraic concepts, including adding and subtracting polynomials, factoring trinomials, and the Zero Principle.		
		Design Specifications:		
		1. Algebra Tiles should come in a set of 30 that includes the following:		
		a. 4 pcs Big Square Tile about 50mm x 50mm x 1 mm (minimum size) and color blue.		
		b. 8 pcs Long Tile (Variable Tile) about 10mm x 50 mm x 1 mm (minimum size) and color green.		
		c. 20 pcs of Unit Tile (Constant Tile) about 10 mm x 10mm x 1 mm (minimum size) and color yellow.		
		Note: Each kind of tile should have RED back color to denote the Negative side of the tiles.		
		2. Made of plastic and has no sharp edges.		
		3. Must be stored in plastic box that safely accommodates 30 sets or at least 960 tiles.		
		4. Shall be free from toxic materials.		
		5. Brand must be permanently marked on the plastic storage.		
1	**Base Ten Blocks**	Functional Specifications: Used to demonstrate abstract mathematical concept of the number system such as one-to-one correspondence, place value, and basic addition and subtraction		
		Performance Specifications: Must be able to demonstrate a number's value and place value and vice versa.		
		Design Specifications:		
		1. Made of plastic, smooth surface and edges, and free from toxic materials		
		2. The set includes 100 units (1 cm x 1 cm x 1 cm [minimum]), 10 rods (1 cm x 1 cm x 10 cm [minimum]), 10 flats (1 cm x 10 cm x 10 cm [minimum]), and 1 cube (10 cm x 10 cm x 10 cm [minimum]).		
		Note: Each block should have distinct color from each other (e.g.: Unit - Red, Rod - Yellow, Flat - Green, Cube - Blue).		
		3. Comes with a plastic container with cover to accommodate all the items.		
		4. Shall be free from toxic materials.		
		5. Brand must be permanently marked on the plastic container.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
2	**Beads**	Functional Specifications: Used to reinforce counting, sorting, patterning and sequencing.		
		Performance Specifications: Must be able to scaffold learners in counting and grouping of numbers, colors, patterns, etc.		
		Design Specifications:		
		1) Comprises 5 sets of beads. A set is composed of 100 beads of 10 different colors, pre-inserted in color group array in a cord that can be easy to be moved within. Cord knotted on ends to prevent loose but can be untied for easy change of grouping and patterns.		
		2) Beads hole passes through the center.		
		3) Bead diameter: 9.5 mm to 16 mm		
		4) Cord length: at least 25% longer than the total length of the 100 beads.		
		5) Comes with a plastic transparent storage container with cover.		
		6) Free from toxic material.		
		7) Comes with nylon string of 5-6 meters long that fit loosely to beads hole		
3	**Circle Area Demonstrator**	Functional Specifications: Used to demonstrate area of a circle.		
		Performance Specifications: Performance: Must be able to show/demonstrate derivation of circle's area and how dimensions of a parallelogram is related to it.		
		Design Specifications:		
		1. Material: Plastic		
		2. Circle Diameter: 196 mm (minimum) - Each half comes in different colors		
		3. Thickness: 5 mm (minimum)		
		4. Dissectible into at least 12 sectors		
		5. Comes with base for mounting the circle and the sectors.		
		6. Shall be free from toxic materials.		
4	**Compass, Drawing, student type**	Functional Specifications: Used to draw/construct arcs, semi-circles and circles.		
		Performance Specifications: Must be able to draw/construct arcs, semi-circles and circles.		
		Design Specifications:		
		1. Compass, two legs, solid metal, rigid (not bending), corrosion resistant, and smooth		
		2. Length: 120mm - 160mm;		
		3. With pencil adaptor attached at or integrated on one end of one of the legs. The said adaptor must be able to adapt, also, to any kind of pencil available in the local market;		
		4. Stainless Steel: Well-polished and smooth;		
		6. Brand must be permanently printed on the item/case.		
5	**Cuisenaire Rods, set of 5**	Functional Specifications: Used to provide an interactive, hands-on way to explore mathematics and learn mathematical concepts, such as the four basic arithmetical operations, working with fractions and finding divisors.		
		Performance Specifications: Must be able to demonstrate four fundamental operations, part-to-whole concept, decimals and other concepts related to number sense and measurement.		
		Design Specifications:		
		1) Made of hard, smooth finish plastic materials.		
		2) One (1) set is composed of 74 cuisenaire rods of different colors.		
		3) Each color represents a specific rod length.		
		4) Rod Lengths are: 1cm -white, 2cm - red, 3cm - gray, 4cm - pink, 5cm - yellow, 6cm - green, 7cm - dark green, 8cm - brown, 9cm - blue, and 10cm - orange.		
		5) Comes in a plastic storage container with cover that accomodates 5 sets of cuisenaire rods.		
		6) The item shall be free from toxic materials.		
		7) Brand must be permanently printed on the case.		
6	**Elapsed Time (Clock) Set**	Functional Specifications: Used to demonstrate time and other related concepts.		
		Performance Specifications: Must be able to represent and demonstrate time using hour hand and minute hand.		
		Design Specifications:		
		1. A set includes:		
		a. Two Twelve (12) hour demonstration clock, magnetic		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		b. Segmented timeline, 24-hour timeline (AM and PM) which makes up of 4 segments		
		c. Removable guide numbers		
		d. Start and End arrows		
		2. Dial diameter measures 24-26 cm		
		3. The hour number must be printed in Hindu Arabic numeral and with corresponding minute(s) number in the same numeral format.		
		4. The item shall be free from toxic materials.		
		5. Brand must be permanently printed on the case.		
7	**Geoboard, 11 x 11**	Functional Specifications: Used to explore basic concepts in plane geometry such as perimeter, area and the characteristics of triangles and other polygons.		
		Performance Specifications: Must be able to demonstrate or visually represent different kinds of polygons and circles and how to compute their respective area, perimeter, and circumference.		
		Design Specifications:		
		1. Double sided geoboard - square pattern on one side (11 x 11), circle on the other;		
		2. Made of plastic material and comes in any color;		
		3. The surfaces and edges must be smooth, no warps, must sits flat when laid on the table;		
		4. Board Dimensions (W x L): 229 mm x 229 mm (minimum);		
		5. Edging Height (all sides): 6 mm from the board (minimum);		
		6. Board and Edging Thickness: 3 mm (minimum);		
		7. Array Pin Diameter: 3 mm (Minimum);		
		8. Array Pin Height: 5 mm (Minimum);		
		9. Comes with a transparent plastic case;		
		10. Comes with Instruction Manual in English with illustrations;		
		11. Comes with assorted size and color rubber bands (25 pcs); and		
		12. Brand must be permanently printed on the case		
8	**Geoboard, 5 x 5**	Functional Specifications: Used to explore basic concepts in plane geometry such as perimeter, area and the characteristics of triangles and other polygons		
		Performance Specifications: Must be able to demonstrate or visually represent different kinds of polygons and circles and how to compute their respective area, perimeter, and circumference.		
		Design Specifications:		
		1) Two-sided geoboard, one side is 5 x 5 -pin grid and other side is 12-pin circular pattern with 1-pin on center.		
		2) Made of plastic, any color. 3) Dimension: (W) 175 to 205 mm (L) 175 to 205 mm		
		3) On the bottom surface is the Circle Geoboard with 13 guiding posts. Twelve (12) of these guiding posts are arranged at 30˚ apart on a circle of 150mm diameter while the remaining one (1) guiding post is on the center of the said circle.		
		4) Pins (with head) non-detachable, Diameter 3 mm (minimum), (H) 5 mm (minimum)		
		5) Raised edging to protect pins from collision with other objects e.g., desk surface		
		6) Board and Edging: 3 to 5 mm Thick, no warping and lay flat on table;		
		7) 25 pcs rubber bands included assorted in size and color		
		8) Comes with: a. Instruction manual in English b. plastic case with content description on its cover.		
		9) Brand permanently mark on item/case.		
9	**Geostrips**	Functional Specifications: Used to make and represent different shapes.		
		Performance Specifications: Must be able to show/demonstrate different kinds of angles and shapes.		
		Design Specifications:		
		1. The strips are made of plastic minimum of 1.8 mm thickness and minimum of 18 mm wide in assorted colors with rounded ends;		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2. Comes in various lengths ranging from 50 mm to 350 mm. Example: Red: Blue: a) Shortest: 93-94mm a) Shortest: 124-125mm b) Shorter: 169-170mm b) Longest: 233-234mm c) Longest: 323-324mm Yellow: White: a) Shortest: 150-151mm a) Shortest: 175-176mm b) Longest: 283-284mm b) Longest: 233-234mm		
		3. They are designed to be fastened together with a plastic coated brads or plastic coated round head fasteners to form plane geometric figures.		
		4. One (1) set consists of 68 strips, a minimum of 100 pieces plastic coated brads and a protractor.		
		5. The set comes in a transparent plastic case for proper storage.		
		6. The items shall be free from toxic materials.		
		7. Brand must be permanently marked on the plastic case.		
10	**Ghost Grid Whiteboard, Mobile Magnetic**	Functional Specifications: Used to aid classroom instructions especially in graphical representations such as linear, quadratic, polynomial, histogram, normal curve, etc.		
		Performance Specifications: Must be able to move from one place to another and to clearly show illustrations that do not exceed from 1 meter vertically and 1.2m horizontally guided with lines with 20mm spacing (horizontally and vertically).		
		Design Specifications:		
		1. Mobile Magnetic Grid Whiteboard; plain white on the other side;		
		2. Material: Painted Steel		
		3. Frame: Aluminum, 1" edging;		
		4. Surface Material: Magnetic Painted Steel;		
		5. Grid Pattern: 2" x 2", ghots grid;		
		6. Full Dimensions: 74-75"W x 23-24"D x 69-70"H;		
		7. Board Dimensions: 72-73"W x 40-41"H;		
		8. Base Dimensions: 74-75"W x 23-24"D;		
		9. Tray Style: Full length		
		10. Casters: 4 pieces, 2-inch casters, two with locking brakes;		
		11. Must be properly packed using shipping carton.		
11	**Linking Cubes**	Functional Specifications: Used to assist with the understanding of mathematical concepts		
		Performance Specifications: Must be able to interlock together to build various shapes and structures		
		Design Specifications:		
		1) Linking cubes: 100 pcs in 10 different colors (10 pcs per color).		
		a. Dimension: 1 cm x 1 cm x 1 cm (minimum)		
		b. With interlocking feature for connecting the cubes.		
		2) Comes with plastic transparent storage bucket with cover.		
		3) Fitting is push fit which can be assembled or disassembled without extra effort.		
		4) Shall be free from toxic materials.		
		5. Brand must be permanently marked on the storage.		
12	**Model, Basic 3D Geometrical Collapsible**	Functional: Used to demonstrate relational geometric concepts between polygons and polyhedrons; aid derivation of formula (surface area and volume) of polyhedrons.		
		Performance: Must be able to demonstrate geometrical relationships between polygons (2D) and polyhedrons (3D) in terms of deriving formula on surface area and volume.		
		Design Specifications:		
		1. Set includes 12 solids made of clear plastic with rounded corners and edges, and 12 folding nets in 5 or 6 colors made from soft plastic to fit inside the corresponding solids:		
		2. Base size of solids: 7.8 to 10.5cm		
		Height of solids: 9.5 to 10.5 cm		
		3. Pairs of solid prism and pyramid shall of the same base and height the following:		
		a,b) Cube and Square pyramid		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		c,d) Cylinder and Cone		
		e,f) Triangular prism and Triangular pyramid		
		g,h) Rectangular prism and Rectangular pyramid		
		i,j) Pentagonal prism and Pentagonal pyramid		
		k.l) Hexagonal prism and Hexagonal pyramid		
		4. With activity guide.		
		5. Comes with a plastic transparent storage container with cover that can accomodate all the solids and the activity guide.		
		6. Shall be free from toxic materials.		
13	**Model, Basic 3D Geometrical Solids**	Functional Specifications: Used to represent basic three-dimensional figures.		
		Performance Specifications: Must be able to demonstrate geometrical concepts related to properties of geometrical solids.		
		Design Specifications:		
		1.) . At least 17 types of hollow geometrical 3D solid shapes that includes:		
		a) Cube: 9.5-10.5cm x 9.5-10.5cm x 9.5-10.5cm		
		b) Cone: Height = 9.5-10.5cm; Base diameter = 9.5-10.5cm		
		c) Cylinder: Height = 9.5-10.5cm; Base diameter = 9.5-10.5cm		
		d) Hexagonal prism: Height = 9.5-10.5cm; Length of sides (Base) = 5-6cm		
		e) Hexagonal pyramid: Height = 9.5-10.5cm; Length of sides (Base) = 5-6cm		
		f) Pentagonal prism: Height = 9.5-10.5cm; Length of sides (Base) = 6-7cm		
		g) Pentagonal pyramid: Height = 9.5-10.5cm; Length of sides (Base) = 6-7cm		
		h) Rectangular prism: 9.5-10.5cm x 5-6cm x 9.5-10.5cm		
		i) Square pyramid: Height = 9.5-10.5cm; Base diameter = 9.5-10.5cm		
		j) Triangular prism: Height = 9.5-10.5cm; Length of sides (Base) = 9.5-10.5cm;and		
		h) Triangular pyramid: Height = 9.5-10.5cm; Length of sides (Base) = 9.5-10.5cm		
		i) Sphere: Diameter of Great Circle = 9.5-10.5cm		
		j) Semisphere: Diameter of Great Circle = 9.5-10.5cm		
		k) Square prism: 9.5-10.5cm x 5-5.5cm x 5-5.5cm		
		l) Small cube: 5-5.5cm x 5-5.5cm x 5-5.5cm		
		m) Small Triangular Prism: Height = 9.5-10.5cm; Length of sides (Base) = 5-6cm		
		n) Small Cylinder: Height = 9.5-10.5cm; Base diameter = 5-6cm		
		3) Made of hard plastic		
		4) Comes in a transparent plastic container with cover to accommodate the 17 or more types of geometric solids.		
		5) Surface finish is smooth on all items.		
		6) Brand must be permanently printed on the case.		
14	**Pattern Blocks, 250 pcs/set**	Functional Specifications: Used to explore mathematical concpets, including congruence, similarity, symmetry, area, perimeter, patterns, functions, fractions, and graphing		
		Performance Specifications: Used to demonstrate different kinds of polygons.		
		Design Specifications:		
		1. One (1) set of pattern blocks contains a total of 250 pieces of six geometrical shapes and six colors - 25 each of hexagons and squares; 50 each of trapezoids, triangles, parallelograms, and rhombi.		
		2. Made of smooth surface plastic material.		
		3. Minimum thickness: 5 mm		
		4. Comes with a plastic transparent storage container with cover.		
		5. The items shall be free from toxic materials.		
		6. Brand must be permanently marked on the storage container.		
15	**Pentominoes**	Functional Specifications: Used to develop spatial thinking		
		Performance Specifications: Must be able to demonstrate concepts pertaining to perimeter and area using the 12 kinds of 5-squared geometric shape.		
		Design Specifications:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		1. Geometry puzzle consists of 12 pentominoes, each are made up of 5 equal-sided squares connected edge-to-edge. Dimension of square is 2.54cm x 2.54cm (minimum).		
		2. Twelve (12) pentominoes are classified as the letters F, I, L, N, P, T, U, V, W, X, Y, and Z; each are made up of sturdy plastic. Comes in assorted colors that are free from toxic materials.		
		3. Comes in set of 6 equivalent to 72 pieces (minimum) contained in a plastic storage box.		
		4. Shall be free from toxic materials.		
		5. Brand must be permanently marked on the storage.		
16	**Plastic Two-colored Counters, 1-inch diameter, 200 pcs/set**	Functional Specifications: Used to represent integers and demonstrate fundamental operations on integers.		
		Performance Specifications: Must be able to demonstrate/represent set of numbers, skip counting and integers; perform fundamental operations on integers.		
		Design Specifications:		
		1) Material: Hard Plastic		
		2) Minimum of 200 pieces per set (double-sided color)		
		3) Must have smooth surface and edges		
		4) Chip's diameter: 22mm (minimum)		
		5) Chip's thickness: 1mm (minimum)		
		6) Comes with a transparent plastic container with cover		
		7) Shall be free from toxic materials.		
		8) Brand must be permanently marked on the container.		
17	**Probability Kit**	Functional Specifications: A set of mathematical manipulative used to demonstrate different concept-formation activities in probability.		
		Performance Specifications: Must be able to demonstrate probability concepts using cards, counters, dice, spinners, coins, bills and/or combination of these mathematical manipulatives.		
		Design Specifications:		
		1. Demonstrate probability, random and selective sampling.		
		2. Class kit, at least 180 pcs in a box for large group or individual learning.		
		Consist of the following:		
		a) 30 combination of activities and teacher demonstration on cards		
		b) 52 pcs (1 set) playing cards		
		c) 9 pcs different spinners;		
		d) 50 pcs coins;		
		e) 5 pcs polyhedral dice;		
		f) 3 pcs dot dice;		
		g) 30 two-color (back-to-back) counters or red and yellow chips;		
		h) 2 coin dice		
		i) 6 pcs number dice		
		3. Comes with transparent plastic container with cover.		
		4. Shall be free from toxic materials.		
		5. Brand must be permanently marked on the container.		
18	**Square Units/Tiles, plastic**	Functional Specifications: Used basically to illustrate and estimate the area of a square or rectangle.		
		Performance Specifications: Able to illustrate, estimate and leads in the derivation of formulas for the squares and rectangles.		
		Design Specifications:		
		1) Set of 400 pcs plastic square tiles in four (4) different colors.		
		2) Size: 24 to 30mm, Thickness: 3.8 mm to 6 mm.		
		3) Smooth edges and surfaces.		
		4) Non toxic.		
		5) With activity guide.		
		6) Comes in a transparent storage container with lid.		
		7. Brand permanently mark on the container.		
19	**Tangrams, set of 30**	Functional Specifications: Used to introduce spatial relationships		
		Performance Specifications: Must be able to use as an aid in developing mathematical concepts such as area, perimeter and patterns.		
		Design Specifications:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		1) Tangram includes seven geometric shapes made up of five triangles (two small triangles, one medium triangle, and two large triangles), a square and parallelogram that are in 6 distinct colors.		
		2) The three different-size Tangram triangles are all similar, right isosceles triangles. Thus, the triangles all have angles of 45°, 45°, and 90°, and the corresponding sides of these triangles are proportional.		
		3) All the angles of the Tangram pieces are multiples of 45—that is, 45°, 90°, or 135°, and that the small Tangram triangle is the unit of measure that can be used to compare the areas of the Tangram pieces.		
		4) Material: Plastic that are free from toxic materials.		
		5) The size of the largest square that the 7 tangram pieces can form is 110 x 110 mm (minimum) with thickness of 3mm (minimum).		
		6) Includes an Activity Guide.		
		7) Comes with a sturdy plastic that stores set of 30 tangram (210 pieces) and free from toxic materials.		
		8) Shall be free from toxic materials.		
		9) Brand must be permanently marked on the plastic storage.		
LOT 9: MATHEMATICAL TOOLS & INSTRUMENT				
1	**Balance, Double-pan**	Functional Specifications: Used to compare object masses.		
		Performance Specifications: 1. Must be able to measure mass of an object up to 2000 grams. 2. Pre-adjusted i.e., as the Balance is on a level and stable surface with the main rider and supplementary rider are zero "0" and the taring poise/weight at utmost left end, the Balance can be set to equilibrium zero "0" by turning the fine tuning knob.		
		Design Specifications:		
		1) Used for comparative weighing to determine the difference in mass between two (2) objects, the double-platform beam balance comes equipped with built-in sliding masses and taring poise.		
		2) Capacity: 2,000 grams		
		3) Readability: 2 grams		
		4) Weigh Beam Capacity x Readability: 10 g x 0.1 g, 200 g x 10 g		
		5) NTEP Resolution: 1 : 5,000		
		6) Platform size: Ø15-16 cm		
		7) Platform type: Plate (metal)		
		8) Dimensions (w x d x h): 35-37 cm x 24-26 cm x 17-19 cm		
		9) Comes with four (4) Weights as follows:		
		9.1) 1 pc. 1,000-gram Weight		
		9.2) 1 pc. 500-gram Weight		
		9.3) 1 pc. 200-gram Weight		
		9.4) 1 pc. 100-gram Weight		
		10) Comes with an Instruction Manual in English.		
		11) Comes with a storage plastic case.		
		12) Manufacturer of the country of origin shall issue certificate of calibration for every item.		
		13) Brand/Model must be permanently marked on the item.		
		Performance Specifications: Must be able to show relationship among sides and angles of special right triangles.		
		Design Specifications:		
		1. Material: Plastic, smooth, not flexible and with handle		
		2. Permanent graduation markings in cm in all sides		
		3. For 30° x 60°:		
		Base: 50 cm minimum		
		Thickness: 4 mm minimum		
		4. For 45° x 45°:		
		Base: 50 cm minimum		
		Thickness: 4 mm minimum		
		5. Individually packed in a sturdy plastic bag with zipper		
		6. The items shall be free from toxic materials.		
		7. Brand must be permanently marked on the item.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
2	**Calculator, Graphing, non-projectable**	Functional Specifications: Used to calculate, graph, and analyze mathematical concepts that has been programmed to it as one of its built-in functions.		
		Performance Specifications: Must be able to store, calculate, display, graph, input, analyze and interpret data, simple and complex equations/formula, graphs and/or charts using easy access function menus/keys.		
		Design Specifications:		
		1. Non-projectable Graphing Calculator;		
		2. Stores/calculates/displays input data, complex equations and formulas, graph and or chart;		
		3. Upgradeable operating system. Softwares are accessible via internet and may be downloaded upon receipt of the unit and thereafter;		
		4. Memory: 26 KB-RAM (minimum) and 450 KB-ROM (minimum);		
		5. Display size: at least 8 lines x 16 characters per line;		
		6. Seven (7) different graph styles for differentiating the look of each graph drawn;		
		7. Easy access function menus;		
		8. Readily connectable to Personal Computers (comes with connection accessories);		
		9. Operates on dry cells. Comes with dry cells and ready to use;		
		10. Comes with user's manual in English containing operation guide of the featured functions and in replacing the battery;		
		11. Must operate as stated above and in the manual; and		
		12. Brand must be permanently printed on the item.		
3	**Calculator, Scientific**	Functional Specifications: Used to show mathematical computations.		
		Performance Specifications: Must be able to show correct mathematical calculations using its built-in functions/formula.		
		Design Specifications:		
		1. Display: LCD, 2 line(s) X 10 characters (minimum), stably shows input-expressions/equation, calculation result, and various indicators;		
		2. Built-in functions not less than 240 inclusion of the following:		
		a) Basic Calculations: arithmetic, fraction, percentage, degrees, minutes, seconds, radian (including conversion of the mentioned Basic Calculations);		
		b) Memory calculation, Logarithm and Hyperbolic functions;		
		c) Statistical functions (e.g.: Statistical relationships, standard deviation, Permutation, Combination, etc.); and		
		d) Trigonometric functions: sin, cos, tan, sin-1, cos-1, tan-1;		
		3. Basic keys and function keys are labeled permanently (resistant to finger rub and light acid (vinegar) contamination) and operates as such correspondingly;		
		4. Power requirement: two way dual (battery, built-in solar system), the unit consistently operational after replacing the battery for three trials, its solar system powers the unit normally in a well lit room without the battery;		
		5. Brand must be permanently printed on the case.		
4	**Digital Clock, tabletop**	Functional Specifications: Used to show/display the time in numerals.		
		Performance Specifications: Must be able to display hh:mm format.		
		Design Specifications:		
		1. Font Height: 30mm to 40mm;		
		2. Dry Cell Battery operated		
		3. LCD display; With or wihout On/Off switch		
		4. Minimum Display: Time (hour, minutes & seconds);		
		5. Two display format, can be set to 12-hr and 24-hr.		
		6. The item shall be free from toxic materials;		
		7. Ready to use and comes with a new battery.		
5	**Measuring Kit (Volume)**	Functional Specifications: Used primarily to measure the volume of liquid or bulk solid		
		Performance Specifications: Must be able to measure volume of liquid using different types of measuring tools		
		Design Specifications:		
		1) Material: Plastic, translucent so that liquid inside can be seen easily		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2) Kit includes the following measuring tools:		
		a. Set of Measuring Jars:		
		i) 1 gallon/4000 mL		
		ii) 1/2 gallon/2000 mL		
		iii) 1 quart/1000 mL		
		iv) 1 pint/500 mL		
		v) 1 cup/250 mL		
		b. Set of measuring pitchers:		
		i) 1 quart = 32 oz/1000 mL		
		ii) 1 pint = 16 oz/500 mL		
		iii) 1 cup = 8 oz/250 mL		
		c. Set of measuring cups:		
		i) 1 cup/236 mL		
		ii) 1/2 cup/118 mL		
		iii) 1/3 cup/79 mL		
		iv) 1/4 cup/59 mL		
		v) 1/8 cup/29.5 mL		
		d. Set of measuring spoons:		
		i) 1 Tbsp (15mL)		
		ii) 1/2 Tbsp (7.5mL)		
		iii) 1 tsp (5mL)		
		iv) 1/2 tsp (2.5mL)		
		v) 1/4 tsp (1.25mL)		
		3) Features include both customary and metric measurement showing appropriate graduations in each kind of measuring tools.		
		4) Permanent graduations and labels.		
		5) Materials used shall be free from toxic materials.		
		6) Brand must be permanently printed on the case.		
6	**Meterstick, plastic**	Functional Specifications: Used to measure length.		
		Performance Specifications: Must be able to measure length of objects in flat surfaces up to 1000mm in Metric and 39.37" in English standards of measurement.		
		Design Specifications:		
		1. Material: Plastic;		
		2. Thickness: 6 mm (minimum);		
		3. Width: 24 mm (minimum);		
		4. Length: 1,005 mm (minimum);		
		5. The front is scaled in centimeters, numbered in every centimeter with 0.1 cm (or 1 mm) divisions;		
		6. The back is scaled in inches, numbered in every inch with 1/8 inch divisions;		
		7. The numbers and division lines are in dark color;		
		8. Must be straight and flat; and free from toxic materials;		
		9. Edges and Surfaces should be smooth and even;		
		10. Comes with plastic jacket;		
		11. Standard abbreviation of the measurement unit/s must be followed.		
7	**Protractor (for student)**	Functional Specifications: Used to measure angles in degrees.		
		Performance Specifications: Must be able to draw/construct and measure angles and arcs up to 180°.		
		Design Specifications:		
		1. Protractor, student-type, plastic, transparent, semi-circular, 180º;		
		2. Ø150mm (or 75mm radius), 1mm thick (minimum);		
		3. Angular graduations are in degrees, from 0º to 180º. With two (2) sets of numerals, one reading clockwise and the other reading counterclockwise;		
		4. Linear graduations are in milimeters, from 0 to 100mm;		
		5. With a hole at vertex point enough for a fine string to pass through it;		
		6. Plastic Surface Finish: Smooth, clear, and free from scratches;		
		7. It must be horizontally level when laid flat on a table - no warping;		
		8. Comes with a plastic case; and shall be free from toxic materials.		
8	**Ruler, Plastic, 30 cm/300 mm**	Functional Specifications: Used to measure length and draw straight lines		
		Performance Specifications: Must be able to measure length of objects in metric units up to 30 cm or 300 mm.		
		Design Specifications:		
		1. 30cm/300mm Ruler, plastic, flexible shatter resistant, transparent, smooth surface;		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2. Width x Length: 28 mm x 314 mm (minimum), 1 mm thick (minimum);		
		3. Metric graduations only, one side is numbered in centimeters (cm) x 1mm division and the other side numbered in millimeters (mm) x 1mm division.		
		*Metric graduations are in centimeters, from 0 cm to 30 cm, with every cm subdivided by 1mm graduation.		
		*English graduations are in inches, from 0 inches to 12 inches, with every inch subdivided by 1/16 graduation.		
		4. Clear, readable black, non-groove permanent prints (will not fade and cannot be scratched off);		
		5. With plastic jacket		
		6. Free from toxic materials.		
9	**Scale, Spring, Hanging type**	Functional Specifications: Used to measure weight or force by hanging objects		
		Performance Specifications: Must be able to measure mass of an object up to 25,000 grams.		
		Design Specifications:		
		1. Capacity 25kg, 100g division, starting from zero (0) to 25kg mark. Note: 0 and 25kg should at different point on the dial's scale.		
		2. Metric unit of measure only.		
		3. Mechnanical spring type; With zero (0) adjust knob.		
		4. With 2 pieces S-hook.		
		5. Rust resistant metal body.		
		6. Face/Dial Diameter: 165mm (minimum)		
		7. Manufacturer of the country of origin should issue certificate of calibration for every item.		
		8. Labels of Brand, Capacity, Division or Graduation are permanently printed on the dial.		
10	**Scale, Weighing, analog, 10 kg. capacity**	Functional Specifications: Used to measure weight and/or mass of an object		
		Performance Specifications: Must be able to measure mass of an object up to 10 kilograms.		
		Design Specifications:		
		1. 10kg Capacity, 50g division, starting from zero "0" to "10kg". Note: 0 and 10kg should at different point on the dial's scale.		
		2. Metric unit of measure only.		
		3. Mechnanical spring type; With zero (0) adjust knob.		
		4. Removable stainless bowl, dishwasher safe.		
		5. Metal body, coated.		
		6. Face/Dial Diameter: (W) 165mm (minimum)		
		7. Manufacturer of the country of origin should issue certificate of calibration for every item.		
		8. Labels of Brand, Capacity, Division or Graduation are permanently printed on the dial.		
11	**Scale, Weighing, bathroom-type**	Functional Specifications: Used to measure a person's weight		
		Performance Specifications: Must be able to measure weight from 0 to 120 kg		
		Design Specifications:		
		1) Capacity 120kg or 130kg , 1kg division, starting from zer (0) to capacity.		
		2) Metric unit of measure only.		
		3) Mechanical type; rotating dial. With zero (0) adjust knob.		
		4) Metal body, anti-rust coated. With textured platform non-slip.		
		5) Should be made of metal and plastic combination with powder coating finish for metal parts.		
		6) Scale Size: (W) 250mm (minimum) x (L) 250mm (minimum)		
		7) Manufacturer of the country of origin should issue certificate of calibration for every item.		
		8) Free from toxic materials.		
		9) Labels of Brand permanently printed on the item/dial.		
12	**Tape Measure, 1.5 meters**	Functional Specifications: Used to quantify the size of an object or the distance between objects		
		Performance Specifications: Must be able to measure size/distance of an object up to 1.5 meters.		
		Design Specifications:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		1. Tape Measure, 12 mm width x 1.5 meter long (minimum)		
		2. Made of flexible fiberglass fabric with metal end pieces		
		3. Color: White with black graduation markings		
		4. Graduation: in cm on one side and inches on the other side, smallest graduation in mm, on the opposite side in 1/16 of an inch		
		5. Comes with a plastic case.		
13	**Template, shapes**	Functional Specifications: Used to scaffold drawing of basic geometrical shapes.		
		Performance Specifications: Must be able to aid drawing different geometrical shapes.		
		Design Specifications:		
		1. A transparent plastic template; minimum of 24 geometric shapes *Note: The kinds of geometric shapes approved during post qualification shall be the same shapes to be approved during the pre-delivery inspection.*		
		2. Ideal for drawing geometric shapes.		
		3. Minimum dimensions: 14 cm x 20 cm		
		4. Minimum thickness: 2 mm		
		5. The items shall be free from toxic materials.		
LOT 10: MODELS: EARTH AND OTHER HEAVENLY BODIES				
1	**Globe, Celestial**	Functional Specifications: Used to illustrate the relative locations of observable celestial objects with respect to the earth in the celestial sphere (celestial sphere is what we commonly called sky)		
		Performance Specifications: Should be able to illustrate the relative locations of observable celestial objects with respect to the earth in the celestial sphere (celestial sphere is what we commonly called sky)		
		Design Specifications:		
		1. Star Globe; diameter 11-13 inches, transparent plastic		
		2. Each rotates independently. The star map shows principal stars to the 5th magnitude, names of major stars and constellations, and includes the ecliptic, right ascension and declination scale.		
		3. Must include Names of Months and Days Scales around the globe for easy reference of constellation		
		4. All labels permanently marked on the item		
		5. The horizon mounting allows the Globe to be set for any location.		
		6. Globe is supported on a cradle base made of hard/tough plastic.		
		7. The Nine Dash Line should not appear.		
		8. With English User's Manual includes:		
		a. on the Guide on Using the Model and Sample Student Activity.		
		b. Guide on Using the Model		
		c. Student Activity Sheet and Teacher's Guide		
		9. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		10. Brand must be permanently marked on the item.		
2	**Globe, Terrestrial**	Functional Specifications: Used to represent the earth in three dimensions and the locations and sizes of land masses and water bodies in scale accuracy		
		Performance Specifications: Should be able to represent the earth in three dimensions and the locations and sizes of land masses and water bodies in scale accuracy		
		Design Specifications:		
		1. Globe diameter: 11-13 inches		
		2. Shows the following:		
		(a) All continents, countries with their capitals, and important cities and places		
		(b) Updated with newly established countries, or re-named countries and cities.		
		(c) Illustrates the flow and directions of ocean currents		
		(d) Lines of Latitudes (0°to 90°), graduated both in Northern and Southern Latitudes and Longitudes (0° to 180°), graduated both in Eastern and Western Longitudes		
		(e) International Date Line, Arctic Circle, Tropic of Cancer, Tropic of Capricorn and Antarctic Circle		
		(f) Lines of Equator and Prime Meridian		
		(g) Names of mountain, mountain ranges, volcano, ocean floors, gulfs, seas and lakes		
		(h) Names of continents, seas and country boundaries should be according to international standard.		
		(i) Philippine territory emphasizing the "West Philippine Sea" as one of the Philippine territorial sea boundaries.		
		(j) The Nine Dashed Line should not appear.		
		3. The globe which is made of plastic is mounted on a plastic meridian ring (C-shape) with movable magnifier.		
		4. The base stand is made of hard/tough plastic.		
		5. Brand must be permanently marked on the item.		
		Performance Specifications: Should be able to to represent the different landforms on the earth's surface in three-dimensions		
		Design Specifications:		
		1. Watertight demonstration tray 19-21 inches x 4-6 inches x 1-3 inches		
		2. Three pieces of flexible colored foam		
		3. Three pieces fault structures		
		a. Made of 6 colored layer of rubber or plastic		
		b. Dimension: 12-14 inches x 4-6 inches x 3-5 inches		
		c. can demonstrates normal, reverse and slide slip fault		
		4. Erupting 5-8 inches x 5-8 inches volcano base for demonstration		
		5. With English User's Manual that includes Guide on how to assemble and use the model.		
		6. For geological study		
		7. Must be branded and must be permanently marked on the item		
		Performance Specifications: Should be able to illustrate the external and internal parts of the earth in three dimensions		
		Design Specifications:		
		1. Globe diameter: 11-13 inches inches		
		2. Shows the countries and ocean		
		3. 1/4 part detachable and shows the different layer		
		4. Must have correct permanent makings of the following parts as follows:		
		a. Crust		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		b. Mantle		
		c. Outer Core		
		d. Lower Core		
		5. Made of plastic		
		6. The base stand is made of hard/tough plastic.		
		7. The removable parts must be intact and not falling.		
		8. The Nine Dash Line should not appear.		
		9. Must be branded and permanently marked in the item.		
3	**Model, Tectonics Demonstrator**	Functional Specifications: Used to simulate tectonic processes		
		Performance Specifications: Should be able to simulate tectonic processes		
		Design Specifications:		
		1. Tectonic container dimensions: Length Range: 10 range -13 inches		
		Width Range: 6 range -8 inches		
		Height Range: 3 range - 5 inches		
		Shape: Rectangular		
		2. The model contains the following:		
		a. Two pieces L-shaped plastic plates with screw type long push handles		
		b. One piece Rectangular / Square plastic plates with screw type short push handle used to flatten the sand inside the tectonic container.		
		c. 12 pieces of washers		
		d. 12 pieces of nuts		
		e. Includes 1 kilogram yellow sand and 1 kilogram green sand.		
		3. With English User's Manual that includes		
		a. Operation Guide		
		b. Guide on how to assemble the model.		
		c. Guide on how to use the model with pictures		
		d. Student Activity Sheets		
		6. Must be branded and must be permanently marked on the item		
4	**Model, Volcano, cross section**	Functional Specifications: Used to illustrate the major external and internal parts of a volcano in three dimensions		
		Performance Specifications: Should be able to represent the major external and internal parts of a volcano in three dimensions		
		Design Specifications:		
		1. Dimensions: 10-12 inches diameter x 10-12 inches height		
		2. The parts of the volcano correctly named: Sill, Strata, Dike, Crust, Magma Chamber, Upper Mantle, Lower Mantle, and Vent; permanently marked on the item		
		3. Detailed cross-section shows the inside of the volcano		
		4. With removable red tube		
		5. With 12.5-13 inches clear, circular, plastic tray which fit in the entire model		
		6. It simulates the volcano eruption		
		7. Easy to clean and reusable.		
		8. With English Users' Manual that includes operation guide with easy-to-prepare lava recipe		
		9. Must be branded and permanently marked on the item		
5	**Rock Samples, 24 pcs/set, (minerals of 3 rock types)**	Functional Specifications: Used to show actual samples of most common rocks found on the earth's crust		
		Performance Specifications: Should be able to show actual samples of most common rocks found on the earth's crust		
		Design Specifications:		
		1. Samples/references for in identifying and classifying rocks		
		2. Boxed mineral and rock collection. Should have at least 24 samples comprising minerals: 8 types igneous, 8 types sedimentary, and 8 types metamorphic rocks. There should be colored pictures of the rocks for reference.		
		3. Rock size: 8 cm^3 -20cm^3 (8 mL - 20mL by water displacement)		
		4. Rock should be placed in a plastic packing and properly labelled with its name.		
		5. Samples are individually bagged in appropriate size transparent plastic and numbered and correspond to the description in the lid of the box. Each rock name should be accompanied with rock type, Example: "Basalt" (igneous)		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		6. The box is made of sturdy plastic, compartmentalized for each sample		
		7. Made up of non-toxic material, free from any sharp edges.		
		8. Brand permanently marked on the container box		
6	**Telescope, Astronomical (Reflecting)**	Functional Specifications: Used to enhance the appearance of details of celestial objects not visible to the unaided eye		
		Performance Specifications: Should be able to enhance the appearance of details of celestial objects not visible to the unaided eye		
		Design Specifications:		
		1. Equatorial Reflector Telescope Features		
		a) 112-114mm Aperture		
		b) Focal Length: 900-1000 mm		
		c) Rack-and-Pinion Focuser		
		d) Equatorial Mount with manual control cables		
		e) Setting Circles		
		f) Latitude Control with Scale		
		g) Two Eyepieces - 8.5-9.5mm and 23-27mm diameter each, multi coated		
		h) Tripod i. Maximum Height: 125 cm ii. Adjustable-height iii. Aluminum-alloy legs iv. Tray to hold eyepieces, lights, and accessories v. Spiked feet add stability on uneven/soft ground		
		2. With English User's Manual that includes Operation Guide and Guide on how to assemble the model.		
		3. With permanent marking at the bottom of each eyepiece stating the model, focal length, and diameter.		
		4. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		5. Must be branded and permanently marked on the item		
LOT 11: MODELS: THE HUMAN ANATOMY				
1	**Model, Human Circulatory System**	Functional Specifications: Used to show details of blood flow.		
		Performance Specifications: Must be able to illustrate how the respiratory and circulatory systems work together to transport nutrients, gases, and other molecules to and from the different parts of the body;		
		Design Specifications:		
		1. Life-size, colored relief model.		
		2. Frontal plane is cutaway so blood circulation can be traced to the major organs and extremities.		
		3. Made of non-toxic plastic material (Certificate of non-toxicity is required)		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		4. With arterial system: aorta artery, brachial artery, iliac artery, renal artery, mesenteric artery, pulmonary artery, carotid artery, tibial artery, femoral artery, palmar digital artery, ulnar artery, radial artery, popliteal artery, subclavian artery		
		5. With venous system: basilic vein, renal vein, iliac vein, pulmonary vein, femoral vein, popliteal vein, brachial vein, subclavian vein, palmar digital vein, tibial vein, dorsal venous arch, superior vena cava and inferior vena cava		
		6. With heart, lung, liver, spleen, kidneys, partial skeleton		
		7. The model is washable and must be free from any labels.		
		8. Paint shall be permanent and not be removed when washed with soap and water.		
		9. With name of the model: HUMAN CIRCULATORY SYSTEM MODEL (Font style: Arial, Font size: 32, UPPERCASE, BOLD) permanently marked on the baseboard.		
		10. With no sharp parts and defects.		
		11. Mounted on a stable baseboard.		
		12. Dimensions (minimum): 80cm H x 30cm L x 5cm W		
		13. Safely packed in a box		
		14. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name and labeled with the required parts.		
		15. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Portrait		
		d. Lamination thickness: minimum 0.30mm		
		e. Title: HUMAN CIRCULATORY SYSTEM MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 24, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 12, First letter of the label is capitalized,)		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled		
		16. Must be branded and brand new. The brand shall be permanently marked on the baseboard.		
2	**Model, Human Endocrine System**	Functional Specifications: Used as a visual representation of the endocrine glands in a human body.		
		Performance Specifications: Must be able to illustrate the hormones involved in the female and male reproductive systems; and other hormones present in the human body.		
		Design Specifications:		
		1. Exhibits frontal section of the human body showing all the glands in the endocrine system.		
		2. Both male and female glands are present.		
		3. Features: Pineal, hypothalamus, pituitary, thyroid, parathyroid, thymus, adrenal cortex, kidney, pancreas, testes, ovary, and uterus		
		4. Colorful relief model made of non-toxic plastic material (Certificate of non-toxicity is required)		
		5. With no sharp parts and defects.		
		6. The model is washable and must be free from any labels.		
		7. Paint shall be permanent and not be removed when washed with soap and water.		
		8. With name of the model: HUMAN ENDOCRINE SYSTEM MODEL (Font style: Arial, Font size: 28, UPPERCASE, BOLD) permanently marked on the baseboard.		
		9. Mounted on a stable baseboard.		
		10. Dimensions (minimum): 38cm L x 24cm W x 6cm H		
		11. Safely packed in a box		
		12. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name and labeled with the required parts.		
		13. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		d. Lamination thickness: minimum 0.30mm		
		e. Title: HUMAN ENDOCRINE SYSTEM MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 26, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 12, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		14. Must be branded and brand new. The brand shall be permanently marked on the baseboard.		
3	**Model, Human Nervous System**	Functional Specifications: Used to illustrate the schematic representation of the central and peripheral nervous system.		
		Performance Specifications: Must be able to show the complex network of nerve cells and the motor nerves pathways.		
		Design Specifications:		
		1. One-half life-size, colored, relief model made of non-toxic plastic material (Certificate of non-toxicity is required).		
		2. The model shows the structure of the nervous system (brain, cerebrum, cerebellum, spinal cord, radial nerve, ulnar nerve, median nerve, lumbar plexus, femoral nerve, sacral plexus, sciatic nerve, brachial plexus, intercostal nerve, common peroneal nerve, tibial nerve, saphenous nerve, finger nerve and toe nerve).		
		3. The pathway of the main nerves is well illustrated in relation to the skeleton.		
		4. The model is washable, free from any label, sharp parts and defects.		
		5. Paint shall be permanent and not be removed when washed with soap and water.		
		6. With name of the model: HUMAN NERVOUS SYSTEM MODEL (Font style: Arial, Font size: 30, UPPERCASE, BOLD) permanently marked on the base.		
		7. Mounted on a stable baseboard.		
		8. Dimensions (minimum): 80cm H x 30cm L x 5 cm W		
		9. Safely packed in a box.		
		10. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name; labeled with the required parts.		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Portrait		
		d. Lamination thickness: minimum 0.30 mm		
		e. Title: HUMAN NERVOUS SYSTEM MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 20, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 12, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		12.Must be branded and brand new. The brand shall be permanently marked on the baseboard.		
4	**Model, Human Nose (Nasal-Throat Anatomy)**	Functional Specifications: Used to illustrate the anatomy of the human nose.		
		Performance Specifications: Must be able to show the parts of the sense organs of the human body, specifically the human nose.		
		Design Specifications:		
		1. Life-size, colorful model that features nasal throat anatomy.		
		2. Shows frontal sinus, sphenoid sinus, conchae, nasal vestibule, hard palate, soft palate, oral cavity, tongue, hyoid bone, epiglottis, pharynx, larynx and vocal fold.		
		3. Made of non-toxic plastic material (Certificate of non-toxicity is required)		
		4. The model is washable, free from any label, sharp parts and defects.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5. Paint shall be permanent and not be removed when washed with soap and water.		
		6. With name of the model: HUMAN NOSE MODEL (Font style: Arial, Font size: 26, UPPERCASE, BOLD) permanently marked on the base.		
		7. Mounted on a stable base.		
		8. Dimensions (minimum): 12 cm x 21 cm (width x full height)		
		9. Safely packed in a box.		
		10. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name and labeled with the required parts.		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Portrait		
		d. Lamination thickness: minimum 0.30 mm		
		e. Title: HUMAN NOSE MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 26, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 12, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		12. Must be branded and brand new. The brand shall be permanently marked on the base.		
5	**Model, Human Skeleton**	Functional Specifications: Used as a visual representation of the internal framework of the body.		
		Performance Specifications: Must be able to show the different types of bones.		
		Design Specifications:		
		1. Life-size model made of non-toxic, hard plastic material in natural bone color (Certificate of non-toxicity is required).		
		2. Mounted on stable metal stand, stainless steel rod, Ø minimum of 12 mm., with 5 legged unbreakable plastic with roller casters as support to the skeleton.		
		3. All joints properly articulated and wired; all metal materials that interconnect the bones shall be stainless steel.		
		4. Features: frontal, parietal, temporal, occipital, maxilla, mandible, hyoid bone, vertebral column, clavicle, scapula, sternum, xiphoid process, ribs, humerus, radius, ulna, carpals, metacarpals, phalanges, ilium, sacrum, coccyx, pubis, ischium, femur, patella, tibia, fibula, calcaneus, tarsals, metatarsals and phalanges		
		5. The model is washable, free from any label, sharp parts and defects.		
		6. Minimum height of the human skeleton: 158 cm		
		7. Minimum height after mounting on the stand: 168 cm		
		8. Some bones can be assembled or detached.		
		9. Enclosed in a plastic and packed in a sturdy box.		
		10. Provided with a dust cover.		
		11. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name and labeled with the required parts.		
		12. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Portrait		
		d. Lamination thickness: minimum 0.30mm		
		e.Title: HUMAN SKELETAL SYSTEM MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 26, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 12, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled		
		13. Must be branded and brand new. The brand must be permanently marked on the item.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
6	**Model, Human Torso**	Functional Specifications: Used to visualize the structures/organs found in the human body.		
		Performance Specifications: Must be able to illustrate how the organs are connected in a system.		
		Design Specifications:		
		1. Life-size, smooth-finish, plastic material mounted on a stable base.		
		2. Detachable head;		
		3. Open back, exposed spine with 2 to 4 removable vertebra and spinal cord		
		4. With interchangeable male and female reproductive organs		
		5. (Minimum) 32 dissectible parts that include:		
		a.) removable head (parts of mouth and nasopharynx exposed) b.) with brain exposed (1 to 8 part), with arteries c.) eye with optic nerve d.)female breast plate with plate rib; e) right and left lung (2 to 4 part) f.) 2-part heart g) 2-part stomach h.) liver with gall bladder, i.) 3 to 4 part intestinal tract with appendix flap j.) kidney half k.) 3-part female genital organ with removable fetus l.) 4-part male genital organ		
		6. Height (minimum): 845 mm.		
		7. True to life color and free from toxic materials (Certificate of non-toxicity is required).		
		8. Will be able to stand upright with removable parts intact and not falling.		
		9. The model is washable, free from any labels and sharp parts.		
		10. Paint shall be permanent and not be removed when washed with soap and water.		
		11. With name of the model: HUMAN TORSO MODEL (Font style: Arial, Font size: 36, UPPERCASE, BOLD) permanently marked on the base.		
		12. Enclosed in a polystyrene foam and packed in a sturdy box		
		13. With English User's manual that includes description of the model, diagram with labels, and guide on how to assemble/disassemble the model.		
		14. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size (minimum): 165 mm x 215 mm Fold;		
		(minimum): 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		15. Must be branded and brand new. The brand shall be permanently marked on the base.		
7	**Model, Lung Demonstration**	Functional Specifications: Used to demonstrate how the lungs work and the concept of respiration.		
		Performance Specifications: Must be able to demonstrate the process of respiration.		
		Design Specifications:		
		1. This interactive, model consists of the following:		
		a. clear plastic enclosure		
		b. two (2) rubber balloons		
		c. elastic rubber membrane		
		d. rubber stopper (with one hole) that snugly fits the mouth of the bell jar		
		e. y-tube whose diameter fits the hole on the rubber stopper		
		2. Made of non-toxic materials (Certificate of non-toxicity is required)		
		3. Minimum base diameter : 18 cm		
		4. Minimum height (including stopper): 30 cm		
		5. Safely packed in a box		
		6. With English User's manual that shall provide description of the model, it's operation and maintenance guide.		
		7. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		b. Size (minimum): 165 mm x 215 mm Fold		
		(minimum): 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		8. Must be branded and brand new. The brand shall be permanently marked on the item.		
8	**Model, Pumping Heart**	Functional Specifications: Used to simulate blood flow through the heart chambers.		
		Performance Specifications: Must be able to demonstrate basic heart and pulmonary blood flow.		
		Design Specifications:		
		1. An interactive model that illustrates how the heart and lungs work together for oxygen exchange		
		2. With heart chambers, main artery, veins and lungs labeled clearly		
		3. Made of non-toxic plastic material; with a rubber pump (Certificate of non-toxicity is required)		
		4. The liquid is sealed in the model		
		5. Inclusion: Two (2) extra stopper screws and dye		
		6. Dimensions (minimum): 29 cm L x 27 cm W x 12 cm D		
		7. Safely packed in a box		
		8. With User's manual that shall provide guide on how it works; with heart study/activity instructions		
		9. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size (minimum): 165 mm x 215 mm Fold		
		(minimum): 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		10. Must be branded and brand new. The brand shall be permanently marked on the item.		
9	**Model, Reproductive System, Female (Pelvic Anatomy)**	Functional Specifications: Used to visually represent the female reproductive system.		
		Performance Specifications: Must be able to show the parts of the female reproductive and genitourinary system.		
		Design Specifications:		
		1. Shows a longitudinal section of one-piece, life-size female pelvis.		
		2. Exhibits colored internal structures of the genitourinary system: urinary bladder, urethra, vagina, cervix, uterus, ovary, fallopian tube, fimbria, rectum, labium minus and labium majus.		
		3. Made of non-toxic plastic material (Certificate of non-toxicity is required)		
		4. The model is washable, free from any labels and sharp parts.		
		5. Paint shall be permanent and not be removed when washed with soap and water.		
		6. With name of the model: FEMALE REPRODUCTIVE SYSTEM (PELVIC ANATOMY) MODEL (Font style: Arial, Font size: 16, UPPERCASE, BOLD) permanently marked on the base		
		7. Dimensions (minimum): 25 cm L x 18 cm W x 28 cm H		
		8. Mounted on a stable base.		
		9. Safely packed in a box.		
		10. Comes with a plastic laminated key card that shall contain the actual colored picture of the model including the name and labeled with the required parts.		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		
		d. Lamination thickness: minimum 0.30 mm		
		e.Title: FEMALE REPRODUCTIVE SYSTEM (PELVIC ANATOMY) MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 22, UPPERCASE, BOLD)		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 14, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		12. Must be branded and brand new. The brand shall be permanently mark on the base.		
10	**Model, Reproductive System, Male**	Functional Specifications: Used to visually represent the male reproductive system.		
		Performance Specifications: Must be able to show the parts of the male urology and reproductive system.		
		Design Specifications:		
		1. Shows a longitudinal section of one-piece, life-size male pelvis.		
		2. Exhibits bladder, prostate, rectum, seminal vesicle, testicle, epididymis, penis, vas deferens and urethra		
		3. Made of non-toxic plastic material (Certificate of non-toxicity is required)		
		4. The model is washable, free from any label, sharp parts and defects.		
		5. Paint shall be permanent and not be removed when washed with soap and water.		
		6. With name of the model: MALE REPRODUCTIVE SYSTEM MODEL (Font style: Arial, Font size: 26, UPPERCASE, BOLD) permanently marked on the base.		
		7. Mounted on a stable base		
		8. Dimensions (minimum): 25 cm L x 18 cm W x 28 cm H		
		9. Safely packed in a box		
		10. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name and labeled with the required parts.		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		
		d. Lamination thickness: minimum 0.30mm		
		e. Title: MALE REPRODUCTIVE SYSTEM MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 26, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 14, First letter of the label is capitalized,)		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled		
		12. Must be branded and brand new. The brand shall be permanently marked on the base.		
11	**Model, Human Digestive System**	Functional Specifications: Used to illustrate how food travels through the digestive tract from the mouth, esophagus, stomach, small intestine, large intestine, and excrete wastes to the anus		
		Performance Specifications: Provide useful visual representations, which can be used to assist understanding of the various changes and processes that take place in the digestive system.		
		Design Specifications:		
		1. Made of non-toxic plastic material (Certificate of non-toxicity is required).		
		2. Life size, 3-parts, colored relief model that features longitudinal section of head, bisected stomach, with removable transverse colon, full liver with gall bladder, with cutaway caecum to show the junction of small and large intestine.		
		3. Mounted on a stable baseboard and can be hung.		
		4. The model is washable, free from any label, sharp parts and defects..		
		5. Paint shall be permanent and not be removed when washed with soap and water.		
		6. With name of the model: HUMAN DIGESTIVE SYSTEM MODEL (Font style: Arial, Font size: 36, UPPERCASE, BOLD) permanently marked on the base.		
		8. Dimensions (minimum): 82 cm H x 27cm L x 8 cm W		
		9. Safely packed in a box.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		10. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name; labeled with the required parts (mouth, tongue, pharynx, trachea, esophagus, liver, gall bladder, stomach, spleen, pancreas, duodenum, jejunum, ileum, appendix, cecum, ascending colon, transverse colon, descending colon, rectum, anus).		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Portrait		
		d. Lamination thickness: minimum 0.30 mm		
		e. Title: HUMAN DIGESTIVE SYSTEM MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 26, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 14, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		12.Must be branded and brand new. The brand shall be permanently marked on the baseboard.		
LOT 12: MODELS: OTHER BIOLOGICAL STRUCTURES AND SPECIES				
1	**Model, Animal Cell**	Functional Specifications: Used as a visual representation of an animal cell.		
		Performance Specifications: Must be able to illustrate structures in an animal cell.		
		Design Specifications:		
		1. Three-dimensional model with colorful cell structures and raised-relief organelles.		
		2. Features: nucleus, nucleolus, nuclear pore, nucleoplasm, nuclear envelope, smooth endoplasmic reticulum, rough endoplasmic reticulum, mitochondrion, ribosome, Golgi apparatus, centriole, lysosome, peroxisome, cytoplasm, cell membrane and chromatin		
		3. Dimensions (minimum): 30 cm L x 39 cm H x 11 cm W		
		4. Made of non-toxic plastic material (Certificate of non-toxicity is required)		
		5. Mounted on two post stand with stable base.		
		6. The model is washable, free from any label, sharp parts and defects.		
		7. Paint shall be permanent and not be removed when washed with soap and water.		
		8. With name of the model: ANIMAL CELL MODEL (Font style: Arial, Font size: 40, UPPERCASE, BOLD) permanently marked on the base.		
		9. Safely packed in a box		
		10. Comes with a plastic laminated key card that shall contain the actual colored picture of the model including the name and labeled with the required parts.		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout orientation: Landscape		
		d. Lamination thickness: minimum 0.30 mm		
		e. Title: ANIMAL CELL MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 32, UPPERCASE, BOLD).		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 12, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		12. Must be branded and brand new. The brand shall be permanently marked on the base.		
2	**Model, Animal Meiosis**	Functional Specifications: Used to visualize the different phases of animal meiosis.		
		Performance Specifications: Must be able to make a comparison between meiosis and mitosis phases and their role in the cell-division cycle.		
		Design Specifications:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		1. Three-dimensional relief model made of non-toxic plastic material (Certificate of non-toxicity is required)		
		2. A set depicting 10 phases of meiosis namely:		
		a) Interphase (G1-phase),		
		b) Prophase I (leptotene),		
		c) Prophase I (Zygotene and pachytene),		
		d) Prophase I (diplotene),		
		e) Prophase I (diakinesis),		
		f) Metaphase I		
		g) Anaphase I,		
		h) Telophase I, Cytokinesis I,		
		Interkinesis, Prophase II, and		
		Metaphase II,		
		j) Anaphase II,		
		i)Telophase II and Cytokinesis II		
		3. Labels of the phases must bear the correct spelling as stated above		
		4. Shows the nucleus, centrioles, centrosome, chromatin, chromosomes, spindle fiber and aster;		
		5. The color of the cell models shall be in accordance with the coloring methods of microscopy;		
		6. Individual cell model is magnetic and detachable;		
		7. Each model rests in a magnetic board/frame;		
		8. Magnets shall not separate from the cell model;		
		9. Cell models must not fall when the frame is vertically mounted		
		10. Product measures (minimum): 598 mm long x 58 mm thick x 398 mm wide		
		11. With a stable metal rod for free standing storage or hanging up		
		12. With name of the model: ANIMAL MEIOSIS MODEL (Font style: Arial, Font size: 36, UPPERCASE, BOLD) permanently marked on the board/frame.		
		13. Safely packed in a box		
		14. With English User's manual that includes the description in each phase of meiosis and storage instructions.		
		15. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size (minimum): 165 mm x 215 mm Fold		
		(minimum): 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		16. Must be branded and brand new. The brand shall be permanently marked on the board/frame.		
3	**Model, Animal Mitosis**	Functional Specifications: Used to visualize the different phases of animal mitosis.		
		Performance Specifications: Must be able to make a comparison between meiosis and mitosis phases and their role in the cell-division cycle.		
		Design Specifications:		
		1. Three-dimensional relief model made of non-toxic plastic material (Certificate of non-toxicity is required)		
		2. A set depicting 9 phases of mitosis namely:		
		a) Interphase,		
		b) Prophase,		
		c) Early Prometaphase,		
		d) Late Prometaphase,		
		e) Metaphase,		
		f) Early Anaphase		
		g) Late Anaphase,		
		h) Telophase		
		i) Cytokinesis		
		3. Labels of the phases must bear the correct spelling as stated above		
		4. Shows the nucleus, centrioles, centrosome, chromatin, chromosomes, spindle fiber and aster;		
		5. The color of the cell models shall be in accordance with the coloring methods of microscopy;		
		6. Individual cell model magnetic and detachable;		
		7. Each model rests in a magnetic board/frame;		
		8. Magnets shall not separate from the cell model;		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		9. Cell models must not fall when the frame is vertically mounted		
		10. Product measures (minimum): 598 mm long x 58 mm thick x 398 mm wide		
		11. With a stable metal rod for free standing storage or hanging up		
		12. With name of the model: ANIMAL MITOSIS MODEL (Font style: Arial, Font size: 36, UPPERCASE, BOLD) permanently marked on the board/frame.		
		13. Safely packed in a box		
		14. With English User's manual that includes the description in each phase of meiosis and storage instructions.		
		15. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size (minimum): 165 mm x 215 mm Fold		
		(minimum): 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		16. Must be branded and brand new. The brand shall be permanently marked on the board/frame.		
4	**Model, Chloroplast**	Functional Specifications: Used to show the complex internal structure of a chloroplast.		
		Performance Specifications: Must be able to illustrate parts and the organelles involved in photosynthesis.		
		Design Specifications:		
		1. Colored 3D model with cut-away section to reveal internal structure.		
		2. Made of non-toxic plastic material (Certificate of non-toxicity is required)		
		3. Features: ribosome, DNA, starch granule, outer membrane, inner membrane, stroma, thylakoid, granum, lamellae, and lumen.		
		4. The model is washable, free from any label, sharp parts and defects.		
		5. Paints shall be permanent and not be removed when washed with soap and water		
		6. With name of the model: CHLOROPLAST MODEL (Font style: Arial, Font size: 36, UPPERCASE, BOLD) permanently marked on the base.		
		7. Mounted on two posts stand with a stable base.		
		8. Dimensions (minimum): 20 cm H x 25 cm L x 23 cm W		
		9.Safely packed in a box.		
		10. Comes with a plastic laminated key card that shall contain the actual colored picture of the model including the name and labeled with the required parts.		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		
		d. Lamination thickness: minimum 0.30 mm		
		e. Title: CHLOROPLAST MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 36, UPPERCASE, BOLD).		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 14, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		12. Must be branded and brand new. The brand shall be permanently marked on the base.		
5	**Model, DNA**	Functional Specifications: Used as a visual representation of the different components of a DNA structure.		
		Performance Specifications: Must be able to illustrate accurately the phosphate, deoxyribose, and base pairs components of a DNA structure.		
		Design Specifications:		
		1. Depicts a minimum of 16 base pair section/layer DNA		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2. Pre-assembled DNA made of attractive, color-coded, non-toxic, abstract shaped plastic parts that represents each bases (Thymine, Adenine, Guanine & Cytosine), the sugar and phosphate components; (Certificate of non-toxicity is required)		
		3. Stands upright with a support rod mounted on a stable rotatable base/stand		
		4. Minimum model height : 60 cm		
		5. The phosphate and deoxyribose can be removed and separated along with individual base pairs		
		6. Double helix structure		
		7. The model can also be uncoiled and ""unzipped"" to produce two strands.		
		8. Must be free from sharp parts and defects		
		9. With name of the model: DNA MODEL (Font style: Arial, Font size: 24, UPPERCASE, BOLD) permanently marked on the base.		
		10. Safely packed in a box		
		11. With English User's manual that includes description of the product, its parts, assembly and storage instructions		
		12. Manual details:		
		a. Material: Inside pages: Book Paper, 80 gsm (minimum 0.08mm)		
		Cover: Paper board, 280 gsm (minimum 0.30 mm)		
		b. Size (minimum): 165 mm x 215 mm Fold		
		(minimum): 330 mm x 215 mm Spread		
		c. Binding: Saddle Staple		
		d. Font type: Arial and Font size (minimum): 10		
		e. Pictures shall be in full color		
		13. Must be branded and brand new. The brand shall be permanently marked on the base.		
6	**Model, Invertebrates**	Functional Specifications: Used to provide information on the anatomy of invertebrate animals.		
		Performance Specifications: Must be able to show the major parts of the invertebrate animals.		
		Design Specifications:		
		1. No sharp parts, non-toxic, true-to-life color, 3D replicas of invertebrates (Certificate of non-toxicity is required)		
		2. With life-like shapes		
		3. The models are washable and must be free from any labels.		
		4. Paint shall be permanent and not be removed when washed with soap and water.		
		5. Each is packed in resealable plastic bag		
		6. Invertebrate models:		
		a. Soft rubber Centipede - Length (minimum): 12 cm		
		b. Plastic Scorpion - Length (minimum): 15 cm		
		c. Plastic Crayfish or Shrimp - Length (minimum): 12 cm		
		7. Each invertebrate model comes with a plastic laminated key card that shall contain the actual-colored picture of the model labeled with the required parts		
		8. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		
		d. Lamination thickness: minimum 0.30mm		
		e. Titles of the key card as stated below: Shall be placed at the top-center (Font style: Arial, Font Size: 28, UPPERCASE, BOLD)		
		e.1 INVERTEBRATE: CENTIPEDE MODEL KEY CARD		
		Features: Tail-like rear pair of legs, segmented trunk, many legs, head, eye, antennae and maxilliped with poison fang		
		e.2 INVERTEBRATE: CRAYFISH or SHRIMP MODEL KEY CARD		
		SHRIMP features: Eye, antennae, rostrum, carapace, abdomen, swimming legs, walking legs, telson, tail		
		CRAYFISH features: Eye, antennae, rostrum, carapace, cheliped, abdomen, walking legs, telson, tail		
		e.3 INVERTEBRATE: SCORPION MODEL KEY CARD		
		Features: Pedipalp (pincer), eyes, legs, carapace, chelicerae, anus, telson, stinger		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		g. Labels shall be without frame (Font style: Arial, Font size: 14, First letter of the label is capitalized)		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled		
		9. Must be brand new.		
7	**Model, Mitochondrion**	Functional Specifications: Used as a visual representation of the working organelles that keep the cell in full energy.		
		Performance Specifications: Must be able to visually represent the structure of mitochondrion as the main organelle involved in respiration.		
		Design Specifications:		
		1. One-piece 3D model made of non-toxic plastic material (Certificate of non-toxicity is required)		
		2. Features: Inner membrane, outer membrane, cristae, matrix, intermembrane space, DNA, ribosome and granule		
		3. Shall be in cross-section longitudinal structure		
		4. The model is washable, free from any label, sharp parts and defects.		
		5. Paint shall be permanent and not be removed when washed with soap and water.		
		6. With name of the model: MITOCHONDRION MODEL (Font style: Arial, Font size: 40, UPPERCASE, BOLD) permanently marked on the base.		
		7. Mounted on a stable base		
		8. Dimensions (minimum): 40 cm L x 20 cm W x 12 cm H		
		9. Safely packed in a box		
		10. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including the name and labeled with the required parts.		
		11. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		
		d.Lamination thickness: minimum 0.30 mm		
		e. Title: MITOCHONDRION MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 32, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 14, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		12. Must be branded and brand new. The brand shall be permanently marked on the base		
8	**Model, Plant Cell**	Functional Specifications: Used as a visual representation of a plant cell.		
		Performance Specifications: Must be able to illustrate structures in a plant cell.		
		Design Specifications:		
		1. Two-piece plant cell 3D model		
		2. Shape: Irregular		
		3. With colorful cell structures and raised-relief organelles		
		4. Features: cell wall, cytoplasm, ribosome, Golgi apparatus, mitochondrion, chloroplast, nucleus, nucleolus, nucelar envelope, nuclear pore, peroxisome, plasmodesma, smooth endoplasmic reticulum, rough endoplasmic reticulum and vacuole.		
		5. Dimensions (minimum): 195 mm L x 110 mm W x 325 mm H		
		6. Made of non-toxic plastic material (Certificate of non-toxicity is required)		
		7. The model is free from any label, sharp parts and defects.		
		8. Paint shall be permanent and not be removed when washed with soap and water.		
		9. With name of the model: PLANT CELL MODEL (Font style: Arial, Font size: 20, UPPERCASE, BOLD) permanently marked on the model itself or onto the base if the model is supplied with a base.		
		10. Safely packed in a box		
		11. Comes with a plastic laminated key card that shall contain the actual-colored picture of the model including name and labeled with the required parts.		
		12. Key card details:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		
		d. Lamination thickness: minimum 0.30mm		
		e. Title: PLANT CELL MODEL KEY CARD shall be placed at the top-center (Font style: Arial, Font Size: 34, UPPERCASE, BOLD)		
		f. The model picture in white background shall be big enough to occupy the center part of the card.		
		g. Labels shall be without frame (Font style: Arial, Font size: 12, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled		
		13. Must be branded and brand new. The brand shall be permanently marked on the item or base whenever applicable.		
9	**Model, Vertebrates**	Functional Specifications: Used to provide information on the anatomy of vertebrate animals.		
		Performance Specifications: Must be able to show the major parts of the vertebrate animals.		
		Design Specifications:		
		1. No sharp parts, non-toxic, true-to-life color, 3D replicas of vertebrates (Certificate of non-toxicity is required)		
		2. With life-like shapes		
		3. The models are washable and must be free from any labels.		
		4. Paint shall be permanent and not be removed when washed with soap and water.		
		5. Each is packed in a resealable plastic bag.		
		6. Vertebrate models:		
		a. Soft rubber SNAKE - Length (minimum): 50 cm.		
		b. Plastic balancing eagle with transparent pyramid tower		
		Eagle (minimum): 12.8 cm L x 9.8 cm W x 2.0 cm H		
		Tower (minimum): 3.8 cm L x 3.8 cm W x 4.8 cm H		
		c. Plastic Shark - Length (minimum): 15 cm		
		7. Each vertebrate model comes with a plastic laminated key card that shall contain the actual-colored picture of the model and labeled with the required parts.		
		8. Key card details:		
		a. A4 size copy paper		
		b. Margin of 1/2 inch on all sides; with 2 pt width border line		
		c. Layout Orientation: Landscape		
		d.Lamination thickness: minimum 0.30mm		
		e. Titles of key cards as stated below: Shall be placed at the top-center (Font style: Arial, Font Size: 28, UPPERCASE, BOLD)		
		e.1 VERTEBRATE: SHARK MODEL KEY CARD		
		Features: Snout, eye, mouth, nostril, gill slit, first dorsal fin, second dorsal fin, pectoral fin, pelvic fin, and caudal fin		
		e.2 VERTEBRATE: BIRD MODEL KEY CARD		
		Features: Head, feather, tail, body, beak, eye, and wing		
		e.3 VERTEBRATE: SNAKE MODEL KEY CARD		
		Features: Head, eye, mouth, tongue, body, scales, and tail		
		f. The model picture in white background shall be big enough to occupy the center part of the card before inserting labels.		
		g. Labels shall be without frame (Font style: Arial, Font size: 14, First letter of the label is capitalized).		
		h. Line with arrowhead of 1.25 pt width shall point to the specific part being labeled.		
		9. Must be brand new		
LOT 13: MODELS: MOLECULAR GEOMETRY				
1	**Model, Atomic Orbital, 82-pc**	Functional Specifications: Used as a model/visual three dimensional (3D) representation of the shapes of the 14 different atomic orbitals		
		Performance Specifications: A) Must be able to		
		a) represent visually the 14 different atomic orbitals		
		b) assemble/build the 14 atomic orbitals (basic s, p and d atomic orbitals)		
		i) one (1) pc 1s-orbital, unhybridized		
		ii) one (1) pc 2s-orbital, unhybridized		
		iii) three (3) pc 2p-orbital unhybridized		
		iv) five (5) 3d-orbital- unhybridized		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		v) one unit with one 2s plus three 2p- orbitals as well vi) as one sp hybrid orbital		
		vii) one (1) pc sp unhybridized change to one pc sp hybridized		
		viii) one (1) pc sp2 unhybridized change to one pc sp2 hybridized		
		ix) one (1) pc sp3 unhybridized change to one pc sp3 hybridized.		
		Design Specifications:		
		1. The pink & purple pear-shaped lobes to represent the 2-wave (positive and negative) phases of the s, p & d atomic orbitals.The pink and purple, pear-shaped lobes represent the phase Material : Plastic		
		2. Opaque white spheres represent atomic nuclei. Material : Plastic		
		3. With **14** easy-to-assemble atomic orbitals ((basic s, p and d atomic orbitals) a) 1 pc - 1s, Unhybridized b) 1 pc - 2s, Unhybridized c) 3 pc - 2p, Unhybridized d) 5 pc - 3d, Unhybridized e) 1 pc with one 2s plus three 2p orbitals, Unhybridized f) 1 pc sp, hybrid orbital, Hybridized g) 1 pc sp2 hybrid orbital, Hybridized h) 1 pc sp3 hybrid orbital, Hybridized		
		4. Approximate model heights including clear, colorless base range from 50–90 mm. a) 50 mm (s orbital), b) 90 mm (p orbital), and c) 80 mm (d orbital).		
		5. The set is composed of the following:		
		a) 9 pc Grey atomic orbital parts		
		b) 17 pc Purple atomic orbital parts		
		c) 19 pc Pink atomic orbital parts		
		d) 2 pc White octahedral atom parts		
		e) 1 pc Black octahedral 23-24 mm carbon atom part		
		f) 1 pc Pink monovalent 17-18 mm atom part		
		g) 1 pc Pink monovalent 23-24 mm atom part		
		h) 1 pc Purple d atomic disc-shaped orbital part		
		i) 1 pc Black tetrahedral 23-24 mm carbon atom part		
		j) 1 pc Black trigonal bipyramidal 23-24 mm carbon atom part		
		k) 1 pc Pink octahedral 23-24 mm atom part		
		l) (1) Hydrogen H- Bond 17-18 mm atom part		
		m) 2 pc White 3-hole 17-18 mm atom parts		
		n) 2 pc White 7-hole atom parts		
		o) 8 pc Grey rigid 27-28 mm bonds		
		p) 14 pc clear transparent Pedestal Stand/ bases		
		6. With durable storage case with four compartments for segregation of parts a) Material of storage box: ABS plastic b) Color: Grey		
		7.) For Contents/ List of materials, In Table form a) For atoms: quantity, name of element(symbol), color code, (number of holes, type of bond angles), diameter of the sphere		
		b) For links; bond types and use		
		8. With assembly guides, individual worksheets and instructional sheets/leaflets in English		
		9. With User's Manual/Teacher's manual in English with full background information		
		10. For numbers #8-9, the technical specifications (a- e) must be followed:		
		a) For Contents/ List of materials, In Table form		
		b) for User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences, grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		e) in 0.3 mm minimum thickness plastic laminated User's Manual/Teacher's Manual/Assembly Guides/ instructional leaflets that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		11. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein.		
		12. Comes with a brand marked permanently in the box		
		13. Must be brand new		
2	**Model, Biochemistry Molecular, (262 atom parts)**	Functional Specifications: Used as a model/visual 3D representation of some biomolecules: proteins, nucleic acids, lipids, and carbohydrates, their structures		
		Performance Specifications: A) Must be able to visually		
		a) represent some biomolecules proteins, nucleic acids, lipids, and		
		carbohydrates, their structures, and relate them to their function.		
		b) observe the chemical bonding		
		c) determine whether the biomolecule is polar or non polar given its structure		
		B) Assemble all the different biomolecules and study them		
		Design Specifications:		
		1. Type : Compact/Semi-space filling models		
		2. Shape of atom parts : Solid spheres		
		3. Material of spheres : Plastic		
		4. Diameter of sphere/atom		
		a) Hydrogen atom : 16-17mm		
		b) Carbon, nitrogen and oxygen atom: 22-23.5 mm		
		5. For compact models, bonds are represented by		
		a) short links		
		b) v-bonds links		
		6. Material of links : Plastic		
		7. Length of links		
		a) short link : 2 mm-11 mm		
		b)v-bonds links : 13-14 mm		
		8. Color of links:		
		a) short link : white/translucent		
		b) v-bonds link : white links		
		9. With 262 color-coded plastic atoms and 260 links		
		10. The Biochemistry Molecular Model set includes the following:		
		A. 262 color-coded plastic atom parts		
		Quantity(pc) Element Color Number of holes Shape		
		i) 68 Black Carbon atoms		
		42 pc Carbon Black Four holes Tetrahedral		
		. 24 pc Carbon Black Three holes Trigonal.		
		2 pc Carbon Black Two holes Linear		
		ii) 34 Blue nitrogen atoms		
		12 pc Nitrogen Blue Four holes Tetrahedral		
		12 pc Nitrogen Blue Three holes Trigonal		
		10 pc Nitrogen Blue Two hole Angular		
		iii) 40 red oxygen atoms		
		20 pc Oxygen Red Two hole Angular		
		10 pc Oxygen Red Two hole Linear		
		10 pc Oxygen Red Single hole		
		iv) 110 White Hydrogen atom parts		
		100 pc White molydome links		
		10 pc Hydrogen White Two hole Linear		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		v) Two (2) Yellow two hole angular sulfur atoms		
		2 pc Sulfur Yellow Two hole Angular		
		vi) Six (6) purple tetrahedral atoms		
		6 pc Phosphorus Purple Four hole Tetrahedral		
		vii) 2 grey metal atoms		
		One (1) pc Metal Grey Four hole Tetrahedral		
		One (1) pc Metal Grey Six hole Octahedral		
		viii) 150 NV-links, colorless		
		ix) 100 Short white links		
		x) 10 V-links, grey		
		C. With two pc link remover tool		
		Color : cream		
		11. WIth two durable large storage boxes a) Material of storage boxes: ABS plastic b) Color: Grey		
		Length : 238-239 mm		
		Width : 167-169 mm		
		Thickness : 6.0-9.0 mm		
		12. With contents/ list of materials in table form, as to:		
		a) For atoms: quantity, name of element(symbol), color code, (number of holes, type of bond angles), diameter of the sphere		
		b) For links; bond types and use		
		13. With Assembly Guides, individual worksheets and instructional leaflets in English		
		14. With User's Manual/Teacher's instruction manual in English with full background information		
		15. For numbers #13 to 14; technical specifications(a-e) must be followed:		
		a) For Contents List of materials, In Table form		
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated Assembly guides/instructional leaflets that shall containthe actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		16. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein		
		17. Must be have a brand printed permanently on the box		
		18. Must be brand new		
3	**Model, Crystal Structures Set (Graphite, diamond, sodium chloride, carbon dioxide)**	Functional Specifications: Used as a model/ visual 3D represention of five crystal compounds		
		Performance Specifications: A) Must be able to visually:		
		a) represent the five different types of crystals and their properties: ionic, covalent, molecular, and metallic		
		b) describe the difference in structure of crystalline (diamond) and amorphous (graphite) solids and		
		d) observe the difference of the ionic, covalent and metallic bonds and		
		e) determine whether a crystal molecule is polar or non polar given its structure		
		B) Assemble the four crystal structures		
		Design Specifications:		
		1. Type : Open/Ball and stick		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2 Shape of atom parts :Solid spheres		
		3 Material of spheres : Plastic with the following dimensions:		
		a)Sodium, carbon: 22-23.5 mm		
		b) Copper : 25-25.5 mm		
		c) Chlorine : 32-32.5 mm		
		4. Types of links/bonds		
		a) Medium (Single, rigid) links		
		b) Long (double/triple, flexible) links		
		5. Material of links: Flexible plastic low density plastic		
		6. Length of solid links/rods		
		a)Medium: 19-27 mm		
		b) Long : 43-44 mm		
		7. Color of links/bonds		
		Medium links: grey white/purple		
		Long links : gray		
		8. The Crystal structure set is composed of the following:		
		a) **Diamond-** covalent crystal model (30 atoms) + links = **70 pc**		
		I. Element Number of holes Angle Shape Color Quantity(pc)		
		i) Carbon (4 hole) 109.5° Tetrahedral Black 30		
		ii) Placed in resealable plastic bag		
		II. Links/Bonds Color Quantity (pc)		
		i) Medium links/ Bonds Grey white 40		
		ii) Placed in resealable plastic bag		
		b) **Sodium chloride (NaCl)-**i/onic crystal model (27 atoms)+links= **81 pc**		
		I. Element Number of holes Shape Color Quantity(pc)		
		i) Chlorine 6 hole Octahedral Green 13		
		ii) Sodium 6 hole Octahedral Silver gray/grey 14		
		iii) Placed in two (2) separate resealable plastic bags		
		II. Links/Bonds Color Quantity (pc)		
		i) Medium Grey white 54		
		ii) Placed in resealable plastic bag		
		c) **Graphite** - covalent crystal model (45 atoms) + links = **100 pc**		
		This kit is designed to make a three layer model of graphite having 15 carbon atoms in each layer.		
		I. Element Number of holes Color Quantity (pc)		
		i) Carbon 5 hole Black 39		
		ii) Placed in resealable plastic bag		
		II. Links/Bonds Color Quantity (pc)		
		i) Long connectors Grey/ white 15		
		ii) Medium connectors(single, rigid) Grey/ white 46		
		iii) Placed in two (2) separate resealable plastic bag		
		d) **Copper -** metallic crystal model/ 14 atoms + links = **50 pc**		
		Crystal structure : face center cubic		
		I. Element Number of holes Color Quantity (pc)		
		i) Copper 8 hole Red 8		
		ii)Copper 6 hole Red 6		
		iii) Placed in two (2) separate Ziploc plastic bag		
		II. Links/Bonds - 36 pc		
		Links/Bonds Color Length Quantity (pc)		
		i) Medium Grey white 65 mm 24		
		ii) Long Grey white 100 mm 12		
		iii) Placed in two (2) separate resealable plastic bag		
		9. With Link remover tool/Assembly tool		
		10. With **1** pc durable plastic storage box a) Material: ABS plastic b) Color: Grey		
		11. Package Dimensions		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a) Length : 235-239 mm		
		b) Width : 167-171 mm		
		c) Thickness : 68-71 mm		
		12. With contents/ list in table form, as to:		
		a) For atoms: quantity, name of element(symbol), color code, (number of holes,type of bond angles), diameter of the sphere		
		b) For links; bond types and use		
		13. With Assembly Guides, individual worksheets and instructional leaflets in English		
		14. With User's Manual/Teacher's instruction manual in English with full background information		
		15. For numbers #12 to 14; they must follow technical specifications a-e:		
		a) For Contents List of materials, In Table form		
		b) for User's Manual, Instruction Sheets/Assembly Guides, In sentences		
		format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 minimum thicness plastic laminated keycard that shall containthe actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled.		
		16. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein		
		17. Comes with a brand marked permanently in the box		
		18. Must be brand new		
4	**Model, Molecular, Inorganic/Organic (307-pc)**	Functional Specifications: Used as a model/visual three dimensional (3D) representation of the different inorganic/organic compounds		
		Performance Specifications: Must be able to :		
		a) visually represent the molecular structures of many inorganic/organic molecules and		
		b) assemble inorganic/organic compounds to show covalent and ionic bonding and c) determine whether a molecule is polar or non polar given its structure		
		Design Specifications:		
		1. Type : Ball and stick		
		2. Shape of atom parts : Solid spheres		
		3. Material of spheres : Plastic		
		4. Diameter of sphere/atom		
		a) Hydrogen and chlorine atoms : 17-17.5 mm		
		b) Other atoms : 23-23.5 mm		
		5. Material of links: Flexible plastic low density polyethylene (LDPE) solid links		
		6. Length, color and quantity of solid links/rods		
		a) Short links		
		i) Type : For space filling		
		ii) Length : 11-12 mm		
		ii) Color : Translucent/white		
		iii)Quantity: 60 pc		
		b) Medium links		
		i) Type : Single, rigid		
		ii) Length : 27-28 mm		
		iii) Color : Grey		
		iv)Quantity: 60 pc		
		c) Long links		
		i) Type : Double/triple/flexible		
		ii) Length : 43-44 mm		
		iii) Color : Grey		
		iv) Quantity : 30 pc		
		7. With 126 atoms, 30 orbitals, 150 links and 1 short link remover tool		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		8. The inorganic/organic molecular model set is composed of the following:		
		I. Shape No. of holes Angles Element/atom Color Qty(pc)		
		a) Tetrahedral 4 holes 109°28' Carbon Black 30		
		b) Trigonal 5 holes 90°/120° Carbon Black 8		
		bipyramidal		
		c)Linear 2 holes 180° Carbon Black 2		
		d) Trigonal 3 holes 120° Carbon Black 6		
		e) Divalent 2 holes 105° Oxygen Red 14		
		f) Monovalent 1 hole Hydrogen White 45		
		g)Tetrahedral 4 holes 109°28' Nitrogen Blue 4		
		h)Divalent 2 holes 105° Sulfur Yellow 1		
		i) Tetrahedral 4 holes 109°28' Sulfur Yellow 1		
		j) Tetrahedral 4 holes 109°28' Phosphorus Purple 4		
		k) Monovalent 1 hole 180° Chlorine Green 8		
		l) Octahedral 6 holes 90° Metal Silver/grey 2		
		m) Divalent atom Grey 1		
		II. Orbitals: 30 pc		
		Orbitals Lengths Color Quantity (pc)		
		a) Pi orbitals 38 mm purple 6		
		b) Pi orbitals 38 mm pink 6		
		c) P orbitals 38 mm purple 6		
		d) P orbitals 38 mm pink 6		
		e) P orbitals 38 mm beige 6		
		III. Links (represented the bonds): 150 links		
		Material of bonds/links : Rigid, non-toxic Flexible plastic (LDPE)		
		Links Type/Kind of bonds Length Color Quantity(pc)		
		a) Medium links (single, rigid) 27 mm Grey 60		
		b) Long links double/triple/flexible 43 mm Grey 30		
		c) Short links 11 mm Translucent/ 60		
		(for space filling) White		
		9. One (1) pc Link remover tool/Assembly tool		
		10. With durable storage box a) Material of storage box: ABS plastic b) Color: Grey		
		a) Length : 238-239 mm		
		b) Width : 167-168 mm		
		c) Thickness : 68-70 mm		
		11. With contents/ list of materials, in table form, as :		
		a) For atoms: quantity, name of element(symbol), color code, (number of holes, type of bond angles), diameter of the sphere		
		. b) For links; bond types and		
		12. With Assembly guides, Individual Worksheets and Instructional leaflets		
		13. With User's Manual/Teacher'sManual in English with full background information		
		14. For numbers #12 to 13; technical specifications (a-e) must be strictly followed:		
		a) For Contents/ List of materials, In Table form		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		b) For User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) With colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated that shall contain the actual colored picture of the model including the name labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Margins on all sides with 2 point width border line		
		v) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		15. Comes with a brand marked permanently on the box		
		16. Must be brand new		
5	**Model, Sublevel Orbitals of the Atom (Quantum)**	Functional Specifications: Used as a visual representation of the spatial three-dimensional (3D) model of the shapes of the orbitals (azimuthal quantum number) of the sublevels of the major energy levels of the first ten elements of the Periodic Table		
		Performance Specifications: Must be able to :		
		A)visually represent the spatial three-dimensional (3D) model of the shapes of the orbitals to describe the quantum mechanical model (azimuthal quantum model) of the first ten elements in the Periodic Table		
		a) two (2) pc s orbitals		
		i)1s-orbital and		
		ii)2s-orbital,		
		b) the three (3) p orbitals		
		i) $2p_x$-orbital		
		ii) $2p_y$-orbital, and		
		iii) $2p_z$-orbital		
		c) the position and number of electrons along the x, y and z axis		
		d) the orbitals of the sublevels of the major energy levels		
		B) Assemble the sublevel orbital of the first ten elements of the Periodic Table based on the electronic configuration of each, to review on the four (4) quantum numbers and rules in filling up the orbitals (the Aufbau Principle, Pauli's exclusion principle, and Hund's rule) , to study and learn the correct position and number of electrons along the x, y and z axis,as well as the orbitals of the sublevels of the major energy levels		
		Design Specifications:		
		1.With 12 Models of the Sublevel orbitals of the atom		
		2. With color-coded components which include the following:		
		3. ORBITALS		
		a) 1s-orbitals (K shell)		
		Shape of 1s orbital: Small sphere		
		Material : Plastic		
		Color : Blue		
		Quantity : 12 pc		
		b) 2s-orbitals (L shell)		
		Shape of 2s orbital : Large sphere		
		Material : Plastic		
		Color : Orange		
		Quantity : 12 pc		
		c) p-orbitals (M shell)		
		i)p_x -orbitals		
		Shape of orbital : Pear shaped lobes		
		Material : Plastic		
		Color : Red		
		Quantity : 24 pc		
		ii) p_y-orbitals		
		Shape of orbital: Pear shaped lobes		
		Material : Plastic		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Color : Yellow		
		Quantity : 24 pc		
		iii) p_z -orbital		
		Shape of orbital : Pear shaped lobes		
		Material : Plastic		
		Color : Green		
		Quantity : 24 pc		
		d) Bases		
		Shape : Spherical		
		Material : Plastic		
		Color : White		
		Quantity : 12 pc		
		e) Crossbars (x and z axes)		
		Shape : Cross-shaped		
		Material : Durable non-toxic plastic		
		Color : White		
		Quantity : 12 pc		
		f) Electrons		
		Shape : Small circular cutouts in a plastic sheet		
		Material : Plastic		
		Color : Black		
		Quantity : 1 whole plastic sheet with cut out 128 pc electrons		
		g) Uprights (y axes)		
		Shape : Long, cylindrical sticks		
		Material : Plastic		
		Color : Cream		
		Quantity: 12 pc		
		4. Individually packed per item as segregated above in separate resealable plastic bags		
		5. With durable plastic storage box a) Material: ABS plastic b) Color: Grey		
		6. With List of Contents in the set		
		7 With Teacher's Guide		
		8. With 30 Student Worksheets and Guides, Part I and Part II		
		9. With quantum numbers chart provided on each student worksheet to help students assemble the models starting with the 1s orbitals.		
		10. Detailed instructions provided.		
		11. For numbers 6-10, the following technical specifications from (a-e) must be followed:		
		a) For Contents/ List of materials, In Table form		
		b) For User's Manual, Teacher's Guide, StudentWorksheets, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Orientation:Portrait		
		v) Margins on all sides with 2 point width border line		
		vi) Line with arrow head of 1.25 point with width shall point to the specific part being labeled		
		12. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein		
		13. Comes with a brand marked permanently on the box		
		14. Must be brand new		
6	**Model, VSEPR, 14 shapes (50-pc)**	Functional Specifications: a) Used as a visual 3D representation of the 14 different shapes of simple molecules with corresponding angles to perform exercises on VSEPR theory using models		
		b) describe the geometry of simple compounds		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: A) Must be able to visually:		
		a) represent all the 14 different shapes of simple molecules with corresponding angles to perform exercises on VSEPR theory		
		b) describe the geometry of simple compounds		
		B) Assemble the 14 different shapes of VSEPR Models and study them		
		Design Specifications:		
		1. Type : Ball and stick		
		2. Shape of atom parts : Solid spheres		
		3. Material of spheres : Plastic		
		4. Diameter of sphere/atom		
		a) Hydrogen, halogen, and metal sphere/atom:-16-17.5 mm		
		b) Other atoms : 22-23.5 mm		
		5. The VSEPR Theory model set is composed of the following:		
		I. With central atoms to construct 14 VSEPR shapes;		
		Color Number of holes Shape Example		
		metallic grey 2 hole linear (e.g.,beryllium in BeCl2		
		yellow 3 hole trigonal planar (e.g., sulfur in SO_3)		
		yellow 3 hole trigonal (e.g., sulfur in SO_2)		
		black 4 hole tetrahedral (e.g., carbon in CH4)		
		yellow 4 hole tetrahedral (e.g., sulfur in SO3 2-)		
		red 4 hole tetrahedral (e.g., oxygen in H2O)		
		light green 4 hole tetrahedral (e.g., flourine in HF)		
		light brown 5 hole trigonal bipyramidal (e.g., phosphorus inPCL5)		
		yellow 5 hole trigonal bipyramidal (e.g., sulfur in SF4)		
		green 5 hole trigonal bipyramidal (e.g., chlorine in ClF3)		
		purple 5 hole trigonal bipyramidal (e.g., xenon in XeF2)		
		grey 6 hole octahedral (e.g., metal complexes)		
		brown 6 hole octahedral (e.g., bromine in BrF5)		
		copper 6 hole octahedral (e.g., copper complexes)		
		b. With the following links/bonds:		
		Quantity(pc) Color Links Bonds		
		50 grey medium links single bonds		
		15 purple medium links lone pairs		
		6 white short links cyanide group		
		6. Comes with short link remover tool		
		7. With durable plastic storage box a) Material: ABS plastic b) Color: Grey		
		8. With contents/ list of materials in table form		
		9. With detailed assembly guides and instructional leaflets s provided.		
		10. With assembly guides, individual worksheets and instructional leaflets		
		11. With User's Manual/Teacher's instruction manual in English with full b background information.		
		12. For numbers #8 to 10 technical specifications (a-e) must be strictly followed:		
		a) For Contents List of materials, In Table form		
		b) for User's Manual, Instruction Sheets/Assembly Guides, In sentences		
		format		
		i) With sentences grammatically correct and		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Orientation: Portrait		
		v) Margins on all sides with 2 point width border line		
		vi) Line with arrow head of 1.25 point with width shall point to the specific part being labeled.		
		13. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein		
		14.Comes with a brand printed permanently onto the box		
		15. Must be brand new		
7	**Models, Organic Stereo-chemistry Molecular**	Functional Specifications: a) Used as a visual 3D representation to understand the three-dimensional nature of molecules, the reactions that they undergo, and stereoisomerism, or spatial isomerism, which is a form of isomerism in which molecules have the same molecular formula and sequence of bonded atoms (constitution), but differ in the three-dimensional orientations of their atoms in space.		
		Performance Specifications: Must be used as a visual 3D representation to understand the three-dimensional nature of molecules and the reactions that they undergo, and stereoisomerism, or spatial isomerism, which is a form of isomerism in which molecules have the same molecular formula and sequence of bonded atoms (constitution), but differ in the three-dimensional orientations of their atoms in space.		
		Design Specifications:		
		1. Type : Ball and stick		
		2. Shape of atom parts : Solid spheres		
		3. Material of spheres : Plastic		
		4. Diameter of sphere/atom		
		a) Hydrogen, halogen, and metal sphere/atom:-16-17.5 mm		
		b) Other atoms : 22-23.5 mm		
		5. The Organic Stereochemistry set is composed of the following:		
		a) 2 pc Atom, Molymod, purple (halogen), 1 hole, 17mm		
		b) 8 pc Atom, Molymod, green (halogen), 1 hole, 17mm		
		c) 2 pc Atom, Molymod, orange (halogen), 1 hole, 17mm		
		d) 2 pc Atom, Molymod, purple (halogen), 1 hole, 17mm		
		e) 30 pc Atom, Molymod, white (hydrogen), hemisphere, 19mm		
		f) 14 pc Atom, Molymod, black (carbon), 4 hole, 109.5 degrees, 23mm		
		g) 4 pc Atom, Molymod, blue (nitrogen), 4 hole, 109.5 deg., 23mm		
		h) 6 pc Atom, Molymod, red (oxygen), 4 hole, 109.5 deg., 23mm		
		i) 6 pc Atom, Molymod, black (carbon), 5 hole, 120/90deg., 23mm		
		j) 2 pc Atom, Molymod, blue (nitrogen), 5 hole, 120/90 deg., 23mm		
		k) 2 pc Atom, Molymod, grey, (metal), 6 hole, octahedral, 23mm		
		l) 40 Bond, Molymod, grey (single), 20mm		
		m) 12 pc Bond, Molymod, grey (double/triple), 35mm		
		m) 50 pc Bond, Molymod, opaque, 2mm (for spacefilling models)		
		6. With 1 pc short link removal tool		
		7. With durable plastic storage box a) Material: ABS plastic b) Color: Grey		
		8. With contents/ list of materials in table form		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		9. With detailed assembly guides and instructional leaflets s provided.		
		10. With assembly guides, individual worksheets and instructional leaflets		
		11. With User's Manual/Teacher's instruction manual in English with full b background information.		
		12. For numbers #8 to 10 technical specifications (a-e) must be strictly followed:		
		a) For Contents List of materials, In Table form		
		b) for User's Manual, Instruction Sheets/Assembly Guides, In sentences		
		format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Orientation: Portrait		
		v) Margins on all sides with 2 point width border line		
		vi) Line with arrow head of 1.25 point with width shall point to the specific part being labeled.		
		13. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein		
		14.Comes with a brand printed permanently onto the box		
		15. Must be brand new		
8	**Molecular Orbital Organic Structures Set 4 Models Collection Set (Benzene, Ethane, Ethene & Ethyne)**	Functional Specifications: a) Used as a visual 3D representation to represent/model the 4 organic molecular orbital models which show: sigma bonding orbitals, pi bonding orbitals, concept of hybridisation and delocalisation.		
		Performance Specifications: Must be used as a visual 3D representation to Functional Specifications: a) Used as a visual 3D representation to represent/make the 4 organic molecular orbital models which show: sigma bonding orbitals, pi bonding orbitals, concept of hybridisation and delocalisation.		
		Design Specifications:		
		1. Type : Ball and stick		
		2. Shape of atom parts : Solid spheres		
		3. Material : Plastic		
		4. With standard shiny colored atom parts to represent the central atom cores with the following dimensions: Diameter of sphere/atom		
		a) Hydrogen, halogen, and metal sphere/atom:-16-17.5 mm		
		b) Other atoms : 22-23.5 mm		
		5. Average scale is 3.5 cm per Angstrom.		
		6. The atomic and molecular orbital parts are represented by pastel/matte colored pieces and are color-coded according to their use.		
		a) The pink and purple pear-shaped lobes and concave π links represent the +ve and -ve signs of the wave functions Ψ of the lobes of atomic and molecular orbitals.		
		b) . The gray pieces represent hybridized sigma bonds. The light brown spheres are used to indicate lone electron pair orbitals. Where the electrons are involved in hydrogen bonding, a light brown pear-shaped lobe is used		
		c). A light brown pear-shaped lobe is used where the electrons are involved in hydrogen bonding		
		7. The Molecular Orbital Organic Structures Set 4 Models Collection Set , 4 Models (Benzene, Ethane, Ethene & Ethyne) is composed of the following:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a) 12 pc carbon atoms		
		b) 18 pc hydrogen atoms		
		c) 9 carbon-carbon (oval shaped) sigma bonds		
		d) 18 carbon-hydrogen (pear shaped) sigma bonds		
		e) 9 pi-bonds 1) 21 pink pieces 2) 21 purple pieces.		
		8. With 1 pc short link removal tool		
		9. Comes in a sturdy plastic storage box.		
		10. With contents/ list of materials in table form		
		11. With detailed assembly guides and instructional leaflets s provided.		
		12. With assembly guides, individual worksheets and instructional leaflets		
		13. With User's Manual/Teacher's instruction manual in English with full background information.		
		14. For numbers #10 to 13 technical specifications (a-e) must be strictly followed:		
		a) For Contents List of materials, In Table form		
		b) for User's Manual, Instruction Sheets/Assembly Guides, In sentences format		
		i) With sentences grammatically correct and		
		ii) With correct spelling and terminologies, punctuations and others		
		c) In original print, not photocopied		
		d) In colored pictures, drawings/illustrations		
		e) in 0.3 mm minimum thickness plastic laminated keycard that shall contain the actual colored picture of the model including the name: labeled with the required parts with details as follows:		
		i) Paper Size : A4 size , 80 gsm		
		ii) Font : Times New Roman		
		iii) Font size : 12		
		iv) Orientation: Portrait		
		v) Margins on all sides with 2 point width border line		
		vi) Line with arrow head of 1.25 point with width shall point to the specific part being labeled.		
		15. Must be free from breakage, cracks , chipped rims, sharp edges, all surface irregularities and all other defects not stated herein		
		16.Comes with a brand printed permanently onto the box		
		17. Must be brand new		
LOT 14: FORCE, MOTION, AND ENERGY KITS				
1	**Advanced Electromagnetism Kit**	Functional Specifications: used to demonstrate the relationship between electricity and magnetism		
		Performance Specifications: should be able to demonstrate the relationship		
		between electricity and magnetism		
		Design Specifications:		
		1. The kit contains the following:		
		a. 2 -Bar Magnets: 148-155 mm X 10-12 mm X 7-8 mm; magnet strength: can suspend load 2 times its weight suspended end-to-end at north or south pole of the magnet, correctly labeled and or color coded to indicate North and south poles		
		b. 6 -Magnetic compass, 18-20 mm diameter, correct orientation of N-S poles		
		c. 2 -U-Magnets, 5.98-6 mm X 15-16 mm cross section X 98-100 mm long, jaw opening: 48-50 mm; magnet strength: can suspend 2 times its weight suspended at north or south pole of the magnet; correctly labeled and or color coded to indicate North and south poles		
		d. 1 -Magnetic field mapper-8.5-9 cm X 15.5-16 cm clear transparent casing contains iron filings immersed in non mold forming viscous liquid, should clearly show magnetic lines		
		e. 1 -spool magnet wire (insulation coated) #20, 500 g.		
		f. 1 - steel rod 10.5-12 mm dia x 98-100 mm long		
		g. 2 -copper wire solid, #14, insulated,14.5-15 cm long each wire		
		h. 3- wood blocks 23-25 mm X 73-75 mm X 98-100 mm with pilot holes that run through center of block		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		2. Comes with plastic container that can accomodate the items indicated above.		
		3. Brand permanently marked on plastic container		
2	**Air Blower**	Functional Specifications: Used to blow air into light balls to keep them airborne to demonstrate Bernoulli's principle.		
		Performance Specifications: Should be able to blow air into light balls to keep them airborne to demonstrate Bernoulli's principle		
		Design Specifications:		
		1. Electric air blower with variable speed control from 0 to 14000 RPM, volute type, 400 W motor rating, 220 to 240 VAC 60 Hz power supply,		
		2. With English User's Manual that includes operation guide		
		3. With cartoon transport box		
		4. Brand permanently marked on the item		
3	**Archimedes Principle Set**	Functional Specifications: Used to visually demonstrate that objects immersed in a liquid like water displaces volume of liquid equal to the volume of the immersed object and that the apparent lost of weight of the immersed object is equal to the weight of the displaced liquid		
		Performance Specifications: Should be able to visually demonstrate that objects immersed in a liquid like water displaces volume of liquid equal to the volume of the immersed object and that the apparent lost of weight of the immersed object is equal to the weight of the displaced liquid		
		Design Specifications:		
		1. The item consists of:		
		a) Bucket and Plummet: Transparent		
		bucket with handle stainless steel/brass, plummet white color with hook;		
		Capacity: 100 mL		
		Compose of bucket and plummet with graduation. Permanently marked accurate divisions on plummet and bucket representing different volume levels. Divisions should be aligned when the plummet is inserted into the bucket.		
		Overflow can 450 mL capacity		
		Catch bucket		
		spring scale 2N/200g		
		Material: transparent plastic		
		2. Fixations and supports should be stable during activity		
		3. With English Manual that includes User's Guide		
		4. Contained in a styropor storage box, styropor box in transport packaging		
		5. Brand permanently marked on packaging		
4	**Basic Electronics Kit**	Functional Specifications: Used to perform activities on resistors, capacitance, ohmic and non-ohmic resistance and other basic electronics concepts		
		Performance Specifications: Should be able to perform activities on resistors, capacitance, ohmic and non-ohmic resistance and other basic electronics concepts		
		Design Specifications:		
		1. Each component is mounted on individual plastic board with color coded binding post terminals depending on mounted components (see No. 4 for color code of binding post terminals) Dimensions: 58-60 mm width x 78-80 mm length x 4.5-5 mm height		
		2. Component name and symbol should be permanent (embossed or etched) and painted black on conspicuous location on board.		
		3. With external binding post connectors that can accommodate 4 mm banana plugs, color coded encapsulation: black for negative, red for positive, yellow for non-polar terminals		
		4. The Kit should contain the following:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a. 5-Resistors: (2-100 Ω, 2 watts; 1-1000 Ω, 2 watts; 1-10 kΩ, 2 watts; 1-100 kΩ, 2 watts), binding post terminals: all yellow 2-Rectifier Diodes, IN 4002, binding post terminals: black for negative, red for positive1-LED, large size, binding post terminals: black for negative, red for positive b. 1-NPN transistor, 2N3440 or 2N3439 or equivalent, binding post terminals: black for negative, red for positive c. 2-Capacitor 1000 µF (standard), 25 V, binding post terminals: black for negative, red for positive d. 1-Variable Resistor, large, rotary, carbon, 5 kΩ mono, binding post terminals: all yellow NOTE: industry standard tolerances applicable in all values of resistance and capacitance)		
		5. Items placed in plastic storage box, 1 box per set		
		6. Brand permanently marked on the item		
5	**Basic Lens Set, acrylic**	Functional Specifications: Used to demonstrate refraction of light		
		Performance Specifications: Should be able to demonstrate refraction of light		
		Design Specifications:		
		1. Set of 7 lenses, acrylic material, secured in compartmentalized plastic storage box, with the following types and diameters:		
		1-double convex, 48-52 mm diameter		
		1-plano convex, 48-52 mm diameter		
		1-double concave, 48-52 mm diameter		
		1-plano concave, 48-52 mm diameter		
		1-convex-concave lens, 48-52 mm diameter		
		1-concave-convex lens, 48-52 mm diameter		
		1-double convex lens, 73-77 mm diameter		
		2. Must be contained in one plastic storage box.		
		3. No sharp edges.		
		4. Free from toxic materials certification		
		5. Brand name permanently marked on storage box		
6	**Coefficient of Linear Expansion**	Functional Specifications: Used to verify coefficient of linear expansion of some metals		
		Performance Specifications: Should be able to verify coefficient of linear expansion of some metals		
		Design Specifications:		
		1. With steam jacket pipe, made of brass, 498-500 mm long x 23-25 mm dia., with steam inlet and outlet, with attachment tube for inserting rubber stopper which in turn is inserted with thermometer		
		2. Steam jacket pipe supported by a rigid metal base; with alignment and lock mechanism when inserting expanding rod under study, 26.9-27.2 in X 4.375-4.5in X 1.375-1.5in (L x W x T)		
		3. With dial dial gauge 0-10 mm range, 0.01 mm readability		
		4. Supplied with 3.8-4 mm x 498-500 mm brass, copper, steel rods; rods should be free from sharp, pointed edges		
		5. With English User's Manual that includes operation guide		
		6. Brand permanently marked on the item		
7	**Connector, Black (# 18 copper, AWG stranded) with alligator clip on one end and banana plug on the other end**	Functional Specifications: Used to effectively interconnect components in an electrical circuit		
		Performance Specifications: Should be able to effectively interconnect components in an electrical circuit		
		Design Specifications: # 18 copper, AWG stranded, end to end 345-450 mm gross length, with insulated brass alligator clip, 18 mm - 20 mm jaw length, on one end and 4 mm brass banana plug, on the other end soldered; all black		
8	**Connector, Red (# 18 copper, AWG stranded) with alligator clip on one end and banana plug on the other end**	Functional Specifications: Used to effectively interconnect components in an electrical circuit		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Should be able to effectively interconnect components in an electrical circuit		
		Design Specifications: # 18 copper, AWG stranded, end to end 345-450 mm length, with insulated brass alligator clip, 18 mm-20 mm jaw length, on one end and 4 mm brass banana plug, on the other end, soldered, all red		
9	**Connector, Yellow (# 18 copper, AWG stranded) with alligator clip on one end and banana plug on the other end**	Functional Specifications: Used to effectively interconnect components in an electrical circuit		
		Performance Specifications: Should be able to effectively interconnect components in an electrical circuit		
		Design Specifications: # 18 copper, AWG stranded, end to end 345-450 mm length , with insulated brass alligator clip, 18 mm-20 mm jaw length, on one end and 4 mm brass banana plug, on the other end soldered, all yellow		
10	**DC Ammeter**	Functional Specifications: Used to measure DC current in electrical circuit		
		Performance Specifications: Should be able to measure DC current in an electrical circuit		
		Design Specifications:		
		1. Analog, dual range selectable:-0.2 - 0 - +0.6A/0.02 read;-1.0 -0- +3.0A/0.1 read, ± 2.5% full scale, analog		
		2. Dial plate dimensions: 93-95 mm width x 83-85 mm length,		
		3. Overall encasement dimensions : 93-95 mm width x 128-130 mm depth x 93-95 mm height encasement material: plastic, any color		
		4. Binding post terminals, threaded, can accommodate 4 mm banana plug, brass material, color coded plastic insulation (black for negative or common terminal, red for positive terminal)		
		5. External zero-adjust calibration		
		6. With English User's Manual that includes operation guide		
		7. Brand permanently marked on the item		
11	**DC String Vibrator, string included**	Functional Specifications: Used to demostrate standing waves on a string		
		Performance Specifications: Should be able to demostrate standing waves on a string		
		Design Specifications:		
		1. Utilizes an offset-weighted shaft on a DC motor		
		2. Input voltage (0 volts -6 volts DC)		
		3. Vibration Frequency: controled by stepless attenuator		
		4. With steel mounting platform, binding posts for external wire connection		
		6. With Operation Manual in English		
		7. Brand permanently marked on the item		
12	**DC Voltmeter**	Functional Specifications: Used to measure DC voltage across components in an electrical circuit		
		Performance Specifications: Must be able to measure DC voltage across components in an electrical circuit		
		Design Specifications:		
		1. Analog, dual range selectable -1V -0- +3V/0.1 read-5 0-+15V/ 1.0 read ±2.5% full scale, analog		
		2. Dial plate dimensions: 93-95 mm width x 83-85 mm length,		
		3. Overall encasement dimensions : 93-95 mm width x 128-130 mm depth x 93-95 mm height encasement material: plastic, any color		
		4. Binding post terminals, threaded, can accommodate standard 4 mm banana plug, brass material, color coded plastic insulation (black for negative or common terminal, red for positive terminal		
		5. External zero-adjust calibration		
		6. With English User's Manual that includes operation guide		
		7. Brand permanently marked on the item		
13	**Diffraction slits & Diffraction grating Set**	Functional Specifications: Used to investigate the concept of diffraction of light and to calculate wavelength of light of certain color through diffraction		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Should be able to investigate the concept of diffraction of light and to calculate wavelength of light of certain color through diffraction		
		Design Specifications:		
		The set is composed of:		
		1) Diffraction slits consist of:		
		1 frame single slit, 1 frame double slits; grating size: 34-36 mm x 16-18 mm; frame size: 48-50 mm x 48-50 mm x 1.98-2 mm thick		
		2) Diffraction Gratings consist of:		
		1 frame single slit, 1 frame double slits; grating size: 34-36 mm x 16-18 mm; frame size: 48-50 mm x 48-50 mm x 1.9-2.5 mm thick		
		3) Each frame placed in comparmentalized storage box		
		4) Brand permanently marked on the item		
14	**Digital Geiger-Muller Counter with radioisotopes samples**	Functional Specifications: is used to measure alpha, beta, and gamma radiation		
		Performance Specifications: should be able to measure alpha, beta, and gamma radiation		
		Design Specifications:		
		MAIN UNIT		
		1. Main unit: Digital Geiger-Muller Counter; measures alpha, beta, gamma radiation;		
		2. Manufacturer should be accredited by their respective Nuclear Regulatory Institute/Agency and shall provide calibration certificate for each item issued by the Nuclear Institute/Agency of its country of origin.		
		3. Units of Measurement: milli Roentgen per hour (mR/hr), micro Sievert per hour (µSv/hr), Counts per Minute (CPM), digital readout		
		4. Range: 0.001 mR/hr to 1000 mR/hr		
		5. With provision for connecting to desktop/laptop PC, comes with software and appropriate connectors		
		6. Dimensions: 4-7inches long x 3-4 inches wide x 1-2 inches thick		
		7. Runs on dual power supply: dry cell and external power, comes withdry cell and adapter for external DC input		
		8. With English User's Manual that includes operation guide		
		9. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		10. The offered brand of the item must be an international brand.		
		11. Brand permanently marked on the item.		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Functional Specifications: is used to provide sources of alpha, beta, and gamma radiations		
		Performance Specifications: should be able to provide sources of alpha, beta, and gamma radiations		
		Design Specifications:		
		SET OF LEGAL RADIOISOTOPE SAMPLES		
		1. Set of sample legal radioactive sources, each is enclosed in a permanently shield disk: 2.98-3 mm thick x 23-25 mm dia.		
		2. Each disk is identified by radio nuclide, amount of activity in microcuries, half life and type of radiation		
		The words "Caution - Radioactive Material" appear on the label of each source 0.1 microcurie - alpha source: Polonium 210 as per Appendix A (EXEMPT QUANTITIES OF RADIOACTIVE MATERIALS) of Philippine Nuclear Research Institute (PNRI) Licensing of Radioactive Material (CPR Part 02) 0.1 microcurie - beta source: Strontium 90 as per Appendix A (EXEMPT QUANTITIES OF RADIOACTIVE MATERIALS) of Philippine Nuclear Research Institute (PNRI) Licensing of Radioactive Material (CPR Part 02) 1 microcurie -gamma source: Cobalt 60 as per Appendix A (EXEMPT QUANTITIES OF RADIOACTIVE MATERIALS) of Philippine Nuclear Research Institute (PNRI) Licensing of Radioactive Material (CPR Part 02) All 3 radioisotope samples stored in a safe box and properly labeled		
		3. Brand permanently marked on the item; with English User's Manual that includes operation guide (Permanent and properly labeled; labels are scratch-resistant)		
15	**Dry Cell Holder (size D)**	Functional Specifications: Used to securely mount size D dry cell in place		
		Performance Specifications: Should be		
		able to securely mount size D dry cell in place		
		Design Specifications:		
		1. Single Holder for size D dry cell, snap-on type;		
		2. With built-in nickel plated brass plate connectors;		
		3. Holders can be interconnected in series or parallel;		
		4. Plastic body, should be sturdy, thickness: 1.98-2 mm		
		5. Crack resistant when dropped from 91 cm height, mounted with dry cell;		
		6. Any color		
		7. Brand name permenently marked on the item		
16	**Dry Cell, 1.5 volts, size D**	Functional Specifications: Used to provide 1.5 volts DC power source for a basic electrical circuit		
		Performance Specifications: Should be able to provide 1.5 volts DC power source for a basic electrical circuit		
		Design Specifications:		
		1. industry standard size D 1.5 volt dry cell		
17	**Engine Model (Internal Combustion)**	Functional Specifications: Used to simulate the operation of a 4-stroke cycle gasoline engine		
		Performance Specifications: Should be able to simulate the operation of a 4-stroke cycle gasoline engine		
		Design Specifications:		
		1. Cross section model of a 4-stroke cycle gasoline engine model, Size: 13.5 -14 inches x 7.8-8 inches x 6.8-8 inches		
		2. Material: cast alloy construction, mounted on stable base		
		3. Internal sections in different colors to indicate air, fuel, and gas mixtures and exhaust gas contents. The carburator is shown in section.		
		4. The crankshaft can be rotated by hand wheel to simulate the operating cycle of 4-stroke cycle gasoline engine; with electrical contact for illuminating a a 3-volt lamp as spark plug to simulate ignition		
		5. Base with illustration and correct part names and show the following parts correctly: crank case, crank shaft, connecting rod, cylinder block, piston, intake valve, exhaust valve, push rod, spark plug, rocker arm, exhaust manifold, crank shaft gear, cam shaft gear, cam shaft, contact point, carburator, needle valve, float, throttle valve, intake manifold		
		6. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		7. Brand name permenently marked on the item		
18	**Flask, Florence, glass, 500 mL**	Functional Specifications: Used to contain liquids with unobstructed view of liquid inside; for activity on 'how eye focusses light rays to create an image in the retina'		
		Performance Specifications: Should be able to contain liquids with unobstructed view of liquid inside; for activity on 'how eye focusses light rays to create an image in the retina'		
		Design Specifications:		
		1. standard 500 mL capacity		
		2. Round bottom		
		3. NO Graduations		
		4. Made of glass		
		5. Brand name permanently marked on the item		
19	**Force Table**	Functional Specifications: Used to demonstrate the vector nature of forces		
		Performance Specifications: Should be able to demonstrate the vector nature of forces		
		Design Specifications:		
		1. Table: material-cast iron, diameter: 39.5-40 cm, with stable stand support, 29.5-30 cm height		
		2. With leveling screw		
		3. 360° protractor scale, 1° resolution		
		4. Can demonstrate combination of at least 3 coplanar forces in equilibrium		
		5. Includes the following accessories:		
		a. 3 pieces load hangers -100 grams each		
		b. additional slotted masses to be loaded on each load hanger: 3 pieces-100 grams, 3 pieces- 50 grams, 3 pieces- 20 grams, 3 pieces- 10 grams		
		c. 3 pieces pulley clamps with guide pulley to be clamped on the Force Table		
		d. 1 piece center rod/ post, nickle plated metal, threaded to be mounted on the center of the Force Table		
		e. 1 piece center/ fastening ring, 33-35 mm diameter x 1.98-2 mm thickness, nickle plated metal		
		f. 4 meters string for hanging loads (crochet type), can suspend 500 grams load with out breaking		
		6. With English User's Manual that includes Assembly and Operation Guide		
		7. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
		8. Brand name permanently marked on the item.		
20	**Fuse Holder w/ Fuse**	Functional Specifications: Used to demonstrate the function of fuses		
		Performance Specifications: Should be able to demonstrate the function of fuses		
		Design Specifications:		
		1. Fuse: 0.3 amperes, maximum, slow-blow, glass-tube type, Rating should be engrave/etched on metal cap		
		2. Fuse detachable from holder, holder brass nickel plated, holder mounted on black plastic base w/ dimensions: 10-18 mm x 58-65 mm x 93-95 mm, thickness of material: 1.8-3 mm		
		3. Binding post terminals mounted on base, threaded, can accommodate 4 mm banana plug, brass material, with yellow plastic insulation		
		4. Connecting wires properly soldered to eyelet of binding posts		
		5. Each set comes with at least 50 spare fuses		
		6. Brand name permanently marked on item		
21	**Galvanometer**	Functional Specifications: Used to measure small electrical current		
		Performance Specifications: Should be able to measure small electrical current		
		Design Specifications:		
		1. Analog, general purpose galvanometer;		
		2. -500 to +500 µA full scale/10 µA read, full scale accuracy of ± 2.5%;		
		3. Dial plate dimensions: 93-95 mm width x 83-85 mm length, ;		
		4. Overall encasement dimensions : 93-95 mm width x 128-130 mm depth x 93-95 mm height encasement material: plastic, any color;		
		5. Binding post terminals, threaded, can accommodate 4 mm banana plug, brass material, color coded plastic insulation (black for negative or common terminal, red for positive terminal);		
		6. External zero-adjust calibration;		
		7. With English User's Manual that includes operation guide; and		
		8. With molded styropor as part of its packaging		
		9. Brand name permanently marked on item		
22	**Helical Spring**	Functional Specifications: Used to demonstrate transverse waves		
		Performance Specifications: Should be able to demonstrate transverse waves		
		Design Specifications:		
		1. Wire material: Galvanized Spring Steel Wire;		
		2. Unstretched Length range: 1.6 meter to 1.9 meter;		
		3. Can be stretched to 3 times its length without deformation;		
		4. Coil Outside Diameter: 19 mm to 22mm;		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		5. Wire Diameter: 1.2 mm to 1.4 mm;		
		6. Number of turns per centimeter: 7 to 8 turns;		
		7. With circular hooks (on both ends), hook diameter is 18-20 mm		
23	**Iron Core Rod (non-corrugated)**	Functional Specifications: Used to perform activities on electromagnet		
		Performance Specifications: Should be able to perform activities on electromagnet		
		Design Specifications:		
		1. Iron rod diameter: 10.5-12 mm, length: 98-100 mm		
24	**Laser Light**	Functional Specifications: Used to produce laser beam for diffraction activities		
		Performance Specifications: Should be able to produce laser beam for diffraction activities		
		Design Specifications:		
		1. Pen type laser, red output		
		2. Powered by, 1.5 volts size AA or AAA dry cells		
		3. With ON-OFF switch		
		4. Body dimensions: 12-14 mm diameter x 135-155 mm length		
		5. Laser spot can be projected to a distance of at least 5 meters		
		6. Brand permanently marked on the item		
25	**Long Nose Pliers, 1 pair/set**	Functional Specifications: Used to bend tiny solid wire connectors		
		Performance Specifications: Should be able to bend tiny solid wire connectors		
		Design Specifications: Long Nose Pliers with side cutter, 6 inches minimum long, chrome vanadium material, 1 pair/set		
		Brand name permanently marked on the item		
26	**Magnet Wire**	Functional Specifications: Used to perform activities on electromagnet		
		Performance Specifications: Should be able to perform activities on electromagnet		
		Design Specifications: 1 spool magnet wire (insulation coated) #20, 100 g. spool, brand name permanently marked on spool		
27	**Manometer, Open U-tube with Nakamura-type Water Pressure Apparatus**	Functional Specifications: Used to measure pressure difference of fluids		
		Performance Specifications: Should be able to measure pressure difference of fluids		
		Design Specifications:		
		1. Open U-tube glass manometer tube with a 49.8-50 cm arm with tube diameter of 7.5-8mm with funnel top on one arm and a 2.2-2.5 cm rifted tip on another arm for easy connection with silicone-rubber tubing that fits to the rifted tip		
		2. A millimeter scale is fitted between the arms of the tube		
		3. U-tube is mounted on a wooden board, fixed on a wooden stand for vertical U-tube is mounted on a wooden board, fixed on a wooden stand for vertical mounting		
		4. Includes SIMPLE WATER PRESSURE APPARATUS (Nakamura type) -its body can be made to rotate around a rigid tube. The rigid tube is L-bent to be inserted into the pressure apparatus, so that the pressure apparatus can be rotated -with 10 pcs spare diaphragms per set		
		5. Includes 99-110 cm silicone-rubber tubing for interconnecting U-Tube manometer and the simple water pressure apparatus		
28	**Miniature Light Bulb**	Functional Specifications: Used to demonstrate the conversion of electrical energy to light		
		Performance Specifications: Should be able to to demonstrate the conversion of electrical energy to light		
		Design Specifications:		
		1. Miniature, incandescent, screw type base		
		2. Bulb rating: 2.2 V to 2.5 V, 0.3 A, handling current; engraved on base of bulb		
		3. Operational Specs:		
		a) should fit with bulb socket in bulb holder assembly		
		b) should light with one fresh dry cell connected (1.5 volts)		
29	**Miniature Light Bulb Holder**	Functional Specifications: Used to securely mount light bulb in place		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Should be able to securely mount light bulb in place		
		Design Specifications:		
		1. Socket to match the miniature incandescent light bulb, socket in plastic housing;		
		2. Socket housing is mounted on black, plastic base: Base dimensions : 10-20 mm x 58-65 mm x 93-95 mm, Material thickness: 1.8-2.5 mm		
		3. Binding post terminals, threaded, can accommodate 4 mm banana plug, brass material, with yellow plastic insulation;		
		4. Connecting wires properly soldered to eyelet of binding posts.		
		5. Brand name permanently marked on the item		
		Performance Specifications: Should be able to demonstrate the formation of image by reflection of light		
		Design Specifications:		
		1. Set of 3 spherical mirrors, acrylic, secured in compartmentalized storage box with the following types and diameters:		
		a) 1-plane mirror, 48 to 52 mm diameter		
		b) 1-concave mirror, 48 to 52 mm diameter		
		c) 1-convex mirror, 48 to 52 mm diameter		
		2. All mirrors free from sharp edges;		
		3. Should be clear and no sign of cloudiness		
		Performance Specifications: Should be able to demonstrate the conversion of electrical energy to mechanical energy when set to motor function and vice versa when set to generator function		
		Design Specifications:		
		1. DC motor mode, runs on 6 volts -12 volt DC		
		2. Can function as generator when the armature is rotated; AC-DC generator output is determined by commutator configuration;		
		3. Selectable split-ring and slip-ring commutator that enables AC-DC output w/o changing the direction of rotation of the rotor;		
		4. Binding posts, for external connections, labeled with "motor input: 6 V-12 VDC" and "generator output"		
		5. Rotor is free to rotate unimpeded inside the stator without any parts of the rotor and stator in contact		
		6. Stator is activated by a permanent magnet. Stator assembly should have one color except blue and red; Example all yellow, all white or all black stator assembly.		
		7. Includes spare: 4 pcs belt, 1 set magnet;		
		8. Armature diameter: 66-68 mm , Armature shaft diameter: Ø 7.5-8 mm , w/ rigid mounting;		
		9. Drive pulley, plastic, diameter: 166-170 mm , driven pulley diameter: 24-26 mm , steel nickel plated; 10. Base wooden board dimensions: 195-200 mm x 295-300 mm x 18-20 mm		
		11. Brand name permaently marked on the item		
30	**Multimeter, digital**	Functional Specifications: Used to provide digital readouts of measurements of AC/DC currents and voltages,		
		resistance, capacitance, frequency		
		Performance Specifications: Should be able to provide digital readouts of measurements of AC/DC currents and voltages, resistance, capacitance, frquency		
		Design Specifications: Measurement Coverage, or smaller values in lower range and larger values in upper range::		
		1. DC Voltage: 60mV , 6V , 60V, 600V, 1000V ±0.7%+2.		
		2. AC Voltage: 600mV, 6V, 60V, 600V, 750V ±0.8%+3.		
		3. DC Current: 600µA , 6000µA, 60mA, 600mA ±1.2%+3 / 6A , 10A ±2.0%+10.		
		4. AC Current: 600µA , 6000µA , 60mA, 600mA ±1.5%+3 / 6A, 10A ±3.0%+10.		
		5. Resistance: 600Ω , 6kΩ, 60kΩ, 600kΩ , 6MΩ , 60MΩ ±1.2%+5.		
		6. Capacitance: 10nF, 100nF , 1000nF, 10µF, 100µF, 1000µF , 10mF, 100mF±3.0%+3.		
		7. Frequency : 10Hz , 100Hz, 1000Hz, 10kHz, 100kHz, 1000kHz, 10MHz ±1.0%+5.		
		8. Duty Cycle :0.1%-99.99% ±3.0%+2. 9. Temperature: -20~1000 Centigrade degree / -4~1832 F 10. Display: 6000 counts		
		11. Auto range		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		12. USB Interface function. The measured data stored in the instrument can be uploaded to computer for display, record and analysis		
		13. Comes with: 1*Pair Test Leads, 1*English Operating Manual. 1*Temperature Probe, 1*USB Data Cable		
		14. Brand permanently marked on the item		
31	**Optical Bench Set**	Functional Specifications: Used for mounting lenses, mirrors, screen, light source and other optics components		
		Performance Specifications: Should be able to mount lenses, mirrors, screen, light source and other optics components in place		
		Design Specifications:		
		1. This Complete Set includes:		
		a) 1-meterstick, with centimeter and millimeter graduations		
		b) 1-lens support for the 50 mm diameter lenses and 50 mm diameter mirrors; should be stable when mounted on meterstick, smooth sliding		
		c) 1-lens support for 75 mm lens, should be stable when mounted on meterstick, smooth sliding		
		d) 1- screen support, should be stable when mounted on meterstick, smooth sliding		
		e) 5-white board screens: 9.5-11 cm x 11.5-13.5 cm each		
		f) 2-metal supports for meter stick, should be stable, meterstick should not tip off 1-candle holder, should be stable when mounted on meterstick, smooth sliding		
		g) 1-paraffin candle		
		2. Stand supports for meter stick, holders for lenses, mirrors, screens, and candle should be placed inside one compartmentalized casing;		
		3. With English User's Manual that includes operation guide.		
		4. Brand permanently marked on packaging box		
32	**Pair of Bar Magnets**	Functional Specifications: Used to demonstrate that some things can make objects move and describe forces exerted by magnets		
		Performance Specifications: Should be able to demonstrate that some things can make objects move and describe forces exerted by magnets		
		Design Specifications: Pair of Bar Magnets:		
		1. Dimensions of each: 148-150 mm x 10-12 mm x 7-8 mm		
		2. Magnet strength: can suspend loads at least 2 times its weight when suspended end-to-end at north-south pole of the magnet,		
		3. Color Code: north pole of the magnet should be colored red and the south pole colored blue		
33	**Prism Set**	Functional Specifications: Used to demonstrate characteristics of refraction of light		
		Performance Specifications: Should be able to demonstrate characteristics of refraction of light		
		Design Specifications:		
		1. Set is composed of:a) 1-Rectangular block, solid acrylic, clear on one side and frosted on other side with the following dimensions:		
		length = 68-70 mm		
		width = 48-50 mm		
		thickness = 18-20 mm		
		b) 1-Right angle prism, solid acrylic, clear on one side and frosted on other side with the following dimensions:		
		thickness: 8-10 mm ,		
		base = 38-40 mm		
		height = 63-65 mm		
		c) 1-Semi-circular block, solid acrylic, clear on one side and frosted on other side with the following dimensions:		
		diameter=98-100 mm,		
		thickness 8-10 mm		
		2. Secured in reusable plastic storage casing;		
		3. Brand name permanently marked on the reusable storage casing.		
34	**Resistance Board**	Functional Specifications: Used to investigate factors affecting resistance of a conductor		
		Performance Specifications: Should be able to investigate factors affecting resistance of a conductor		
		Design Specifications:		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		1. Board: dimensions-height: 28 mm-30 mm , width: 118 mm-120 mm length: 645 mm-650 mm, material plastic, channel type, thickness of material: 2.9 mm-3.2 mm free of warpage and other imperfection like flushes etc.		
		2. Board is mounted with the following wires:		
		a) 2 - Nichrome wires of 2 different diameters: 0.23-0.25 mm & 0.48-0.5 mm; length: 598-600 mm		
		b) 1 - Stainless steel wire diameter: 0.48-0.5 mm, length: 598-600 mm		
		c) 1 - Copper wire diameter: 0.48-0.5 mm, length : 598-600 mm		
		3. Board should be marked by decimeter graduations that only span along entire wires' length		
		4. All wires should be rigidly fasten to stainless steel terminal posts		
		5. Brand name permanently marked on the item		
35	**Ring and Ball Apparatus**	Functional Specifications: Used to demonstrate thermal expansion (and contraction) of a metal		
		Performance Specifications: Should be able to demonstrate thermal expansion (and contraction) of a metal		
		Design Specifications:		
		1. The ring and ball set demonstrates thermal expansion.		
		2. Comprising of a captive brass ball secured to a mounted brass ring by a chain.		
		3. Diameter of Ball : 24.99-25.01mm, smooth surface		
		4. Inside Diameter of Ring : 25.03-25.06 mm, smooth surface		
		5. Outside Diameter of Ring: of 36-38 mm		
		6. Thickness of Ring: 4-6 mm		
		7. Diameter of Brass Stem: 4-5mm		
		8. Handle of brass ring made of wood.		
		9. Chain is made of stainless steel with a 3-turn stainless wire ring to keep the ball in the chain during heating.		
36	**Ripple Tank Set**	Functional Specifications: Used to demonstrate properties of transverse waves		
		Performance Specifications: Should be able demonstrate properties of transverse waves		
		Design Specifications:		
		1. Tank: 54.5-55 cm x 54.5-55 cm , with foam beaches perimeter to damp reflections, with 4 detachable legs with leveling screws, height of legs: 54.5-50 cm,		
		2. Glass bottom: 39.5-55 cm x 39.5-55 cm		
		3. Should include the following accessories:		
		a) 1-rippler bar with electronic frequency controller (digital)		
		b) 1-hand rippler bar		
		c) 2-spherical dippers, removable		
		d) 4-parafin blocks		
		e) 1-glass plate, 21.5-22 cm x 29.5-30 cm		
		f) 1-parabolic reflector 1-plastic viewing screen, white, 61.5-62 cm x 61.5-62 cm		
		4. Light Source:		
		a) LED light source 12 volts, 5 watts		
		b) with electronic controlled strobe to synchronize with frequency controller		
		c) detachable and adjustable mounting unto the tank		
		d) black shielded with ventilation		
		5. With frequency display unit that indicates synchronizing frequency between the controller and the strobe		
		6. With English User's Manual that includes Assembly and Operation Guide		
		7. Branded and permanently marked on the item		
		8. Comes with a training video that shows the actual equipment submitted and approved during the sample evaluation and shall contain the following:		
		I. Training Video Contents:		
		a. Name of the equipment b. Parts of the equipment c. Instruction on how to use the equipment d. Sample Experiment/Activity using the equipment e. Maintenance of the equipment f. Troubleshooting g. Storage and safekeeping (include cleaning) of the equipment		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		II. Training Video details:		
		a. Shall be in MP4 format. b. Shall be saved in a USB 3.0 Flash Drive. c. Shall have a High-Definition resolution of at least 1080p. d. Shall have a readable subtitle (font style & size: Arial, 22 Bold) in English that is grammatically error-free and with correct spelling and punctuation marks and in sync with a voiceover/narration. There is an ON/OFF option for subtitle. e. Shall comply an aspect ratio of 4:3. f. Shall have a cover video pane containing the equipment name and a video pane for each video content. g. The video, voiceover (audio), and subtitle shall be in sync. h. The training video shall cover all the above requirement (video contents).		
37	**Slinky Coil, metal**	Functional Specifications: Used to demonstrate longitudinal waves		
		Performance Specifications: Should be able to demonstrate longitudinal waves		
		Design Specifications:		
		1. 2.875-3 inches diameter x 3.875-4 inches long		
		2. zinc or nickel plated		
38	**Sound Resonance Set: Resonance Tube, close-ended**	Functional Specifications: Used to vary the length of air column to produce resonance of sound coming out from the loudspeaker		
		Performance Specifications: Should be able to vary the length of air column to produce resonance of sound coming out from the loudspeaker		
		Design Specifications:		
		1. With plastic stopper fixed on one end of inner tube		
		2. Outer tube: OD: 61-70 mm diameter, 1025-1035 mm long: with detachable rubber plug on free end for safe transport of inner-outer tube assembly 3. Inner tube: OD: 48-50 mm, 1095-1100 mm long, With permanent graduation with mm scale at 1 mm division to indicate length of air column as the inner tube is pushed or pulled along the outer tube; print should resist rubbing, no sign of fade after 100 slides; inner tube with good quality air sealing material (felt cloth)		
		4. With rigid and stable stand to make effective height of outer tube align with loudspeaker cone (please see loudspeaker specifications)		
		5. Height including stand: center of outer tube elevated by 50-52 mm from the surface)		
		6. With English User's Manual that includes Operation Guide		
		7. Brand name permenently marked on the item		
39	**Switch, Knife type, Single Pole Single Throw**	Functional Specifications: Used to open and close an electrical circuit		
		Performance Specifications: Should be able to open and close an electrical circuit		
		Design Specifications:		
		1. Single pole Single Throw Knife type switch Knife dimensions : 0.7- 0.8 mm x 7-8 mm x 53-55 mm, nickel plated brass Plastic handle dimensions : 8-10 mm x 8-10 mm x 20-25 mm		
		2. Contact plates for knife dimensions : 7-8 mm x 18-20 mm, nickel plated brass, thickness of material 0.48-0.5 mm		
		3. Knife switch-contact plates assembly mounted on black plastic base: 10-20 mm x 58-65 mm x 93-95 mm, thickness of base: 1.8-3 mm		
		4. Binding post terminals, threaded, can accommodate standard 4 mm banana plug, brass material, with yellow plastic encapsulation		
		5. Internal connectors properly soldered to eyelet of binding posts;		
		6. Switch fixations should survive 100 continuous on-off operation cycles, without signs of wear and tear		
		7. Brand name permenently marked on the item		
40	**Toy Car, non-friction, non-battery**	Functional Specifications: Used to demonstrate that some things like people can make objects move		

Item	Description	Technical Specifications	STATEMENT OF COMPLIANCE (State Comply or Not Comply)	BIDDER'S ACTUAL OFFER
		Performance Specifications: Should be able to demonstrate that some things like people can make objects move		
		Design Specifications:		
		1. Dimensions: 49.5-60 cm x 29.5-30 cm x 24.5-34 cm (L x W xH)		
		2. Material: plastic, any color or color combination		
		3. 4-wheels free to turn		
		4. not driven by any power source or winding mechanism except by pushing or pulling by people		
41	**Tuning Fork Set**	Functional Specifications: Used to produce sound tones of fixed frequencies that correspond to the frequencies of the first octave in the diatonic scale		
		Performance Specifications: Should be able to produce sound tones of fixed frequencies that correspond to the frequencies of the first octave in the diatonic scale		
		Design Specifications:		
		1. 8 piece tuning forks with standard Scale Letter and Frequencies: C=256 Hz, D=288 Hz, E=320 Hz, F=341 Hz, G=384 Hz, A=426 Hz, B=480 Hz, C=512 Hz		
		2. Aluminum alloy, non-magnetic, handle: 4-4.5 cm length		
		3. Frequency and scale letter stamped on each fork		
		4. With rubber mallet		
		5. Measured sound output frequency should be within 1% of frequency rating stamped on each tuning fork		
		6. Should be able to produce pure tones free from unwanted signals (smooth sine waves without harmonics)		
		7. Brand permanently marked on the storage box		
42	**Vacuum Tube and Manual Vacuum Pump**	Functional Specifications: Used to demonstrate the effect of air resistance on the motion of freely falling objects		
		Performance Specifications: Should be able to demonstrate the effect of air resistance on the motion of freely falling objects		
		Design Specifications:		
		A. Vacuum tube:		
		1. 905-910 mm long x 53-60 mm diameter, transparent acrylic		
		2. With stopcock mounted in a rubber stopper on one end, and solid rubber stopper on the other end		
		3. Supplied with 12-13 inches long vinyl tubing for connection to vacuum pump		
		4. Includes metal disc and a feather as specimens		
		B. Vacuum pump:		
		1. Hand operated		
		2. With pressure gauge		
		3. Pump is sealed, self lubricatiing, with removable cap, and elastic valve		
		4. Fixed on outer port to provide quick vacuum release		
		5. Noozle fits standard 1/4 inch diameter tubing		
		6. Brand permanently marked on the item		