Section VII. Technical Specifications

Notes for Preparing the Technical Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "*or at least equivalent.*" References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

Technical Specifications

Item No.	Specification	Statement of Compliance
		[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]
1	**DISARTICULATED HUMAN SKELETON MODEL, COMPLETE WITH 3-PART SKULL** The replica of the Human Disarticulated skeleton includes one hand and foot on wire, and one hand and foot loosely articulated. Every other bone of the human skeleton is life-sized and separated. The skull's calvarium is sectioned for a closeup view, and the jaw is hinged. The sternum's intracostal cartilage is attached. The spinal column is strung together on thin, nylon string and consists of 53 total pieces. Supplied in a sturdy partitioned cardboard storage box.	

2	**HUMAN BRAIN MODEL** This deluxe brain is medially divided. On the right half of this brain, you will find a colored, systematic grouping and representation of the cerebral lobe. The left half of the brain shows: • Pre- and Post-central region • Broca and Wernicke areas • Heschl's gyrus • Brain nerves Ventricles Both halves of this brain can be disassembled into: • Frontal with parietal lobes • Temporal with occipital lobes • Half of brain stem	
3	**HUMAN EAR MODEL** This high quality human ear model represents outer, middle and inner ear. Ear has removable eardrum with hammer, anvil and stirrup as well as 2-part labyrinth with cochlea and auditory/balance nerve for detailed study of the anatomy of the human ear. Additionally, the human ear includes the detail of two removable bone sections to close the middle and inner ear. Human ear model delivered on base for easy display in a classroom.	
4	**HUMAN EYE MODEL** Removable parts of this anatomical human eye model include: • Upper half of the sclera with cornea and eye muscle attachments • Both halves of choroid with iris and retina • Lens	
5	**DUAL SEX MUSCLE TORSO** With removable 6-part muscle arm. Fully represents the complete anatomy of the human upper body. The right half of the torso shows the skin, the left half the superficial and deeper muscles with nerves, vessels and bony structures. Exact representation of the internal organs. The following parts of the deluxe torso model are removable: • 2-part head • Brain half	

	• Sternocleidomastoideus muscle • 6-part muscle arm (removable Muscles: deltoid , biceps brachii, triceps brachii, palmaris longus with flexor carpi radialis, brachioradialis with extensor carpi radialis • Upper leg stump • Chest/abdominal wall with detachable mammary gland • Torso body • 2 lungs • 2-part heart Liver with gall bladder • 2-part stomach • Kidney half • 4-part intestinal tract • 3-part female genital insert with fetus • 4-part male genital insert It is also supplied with the Torso Guide.	
6	**EMBRYOLOGIC DEVELOPMENT MODEL** The model represents the development of the human germ cells from fertilization until the end of the 2nd month of pregnancy in 12 stages. Each stage can be removed from the common stand as an individual part and can be purposefully used for teaching and tests for the embryological specialist field. • Ovum at time of fertilization (conception) with male gamete (sperm) • Zygote at 2-cell stage, approx. 30 hours after fertilization • Zygote at 4-cell stage, after around 40-50 hours • Zygote at 8-cell stage, after around 55 hours • Morula • Blastocyst after around 4 days • Blastocyst after around 5 days • Blastocyst after around 8-9 days • Germ cells at approx. 11th day • Germ cells at approx. 20th day • Embryo at around the end of the 1st month of pregnancy	
7	**MAGNETIC HEART MODEL** • All of the original heart structures were successfully obtained during the time consuming and detailed casting procedure making this model highly accurate and lifelike	

	• 2 atria and 2 ventricles show all the normal anatomical structures of the papillary muscles and heart valves • Uniquely dissected in the median plane to optimally demonstrate the path of the oxygenated and deoxygenated blood • The heart model shows both the diastolic and systolic state. In the model itself the valves are shown in the diastolic state and in the detail view on the base the valves are shown in the systolic state • The heart valves are made of elasticated plastic making them very durable • The base displays the heart in its natural position in the human body • Life size cast from real human heart • Magnetic assembly (5 pieces) for easy demonstrations	
8	**HUMAN HEART** All of the original heart structures were successfully obtained during the time consuming and detailed casting procedure making this model highly accurate and lifelike • 2 atria and 2 ventricles show all the normal anatomical structures of the papillary muscles and heart valves • Uniquely dissected in the median plane to optimally demonstrate the path of the oxygenated and deoxygenated blood • The heart valves are made of elasticated plastic making them very durable • Life size cast from real human heart • Magnetic assembly (5 pieces) • Colour scheme and disassembly of the heart model in a didactical manner. The chambers of the heart and vessels (including coronary vessels) in which oxygen-rich blood is transported have been displayed in red. Heart chambers and vessels which contain blood low in oxygen have been reproduced in blue.	
9	**HUMAN SIZE SKELETON MODEL** Shows the structural interaction between the bones and muscles. On the left side of the skeleton over 600 important medical and anatomical structures are shown, such as the muscle origins (red) and insertions (blue) as well as hand-numbered bones, fissures and foramina on the right side.	

	• Top quality natural casting • Final assembly carried out by hand • Made from a durable, unbreakable synthetic material • On a stable metal stand with 5 casters (painted white) • Close to the realistic weight of around 200 bones • Natural size • Anatomically correct • 3 part assembled skull • Individually inserted teeth • Limbs can be removed quickly and easily • Comes with metal stand and transparent dust cover	
10	**HUMAN FEMALE PELVIS MODEL** Pelvic bone model naturally cast from a female pelvis. All the pelvic bones are flexibly mounted and can be easily disassembled. Available with femur heads, these models perfectly demonstrate the articulation of the pelvic joints.	
11	**MATERNAL-FETAL BIRTHING SIMULATOR** • Full size, articulating, full-body female • Intubatable airway with chest rise eCPR • IV arm for meds/fluids PACKAGE INCLUDES: • Full-body maternal birthing simulator • Automatic birthing system • Neonate • Articulating birthing fetus • Two umbilical cords • Two dilating cervices • Two umbilical clamps • Two vulval inserts • Three vulvae for postpartum suturing • International Power Supply 100-240 VAC • Controllers • CPR Link software, CPR Link connection cable, CPR module pre- installed in simulator • Silicone lubricant • Carrying bag • Removable stomach cover • Practice Leopold Maneuvers • Multiple fetal heart sounds • Automatic birthing system • Measure head descent and cervical dilation • Multiple placenta locations	

	• Replaceable dilating cervices • Practice postpartum suturing on vulval inserts • One articulating birthing baby with placenta • Neonatal Simulator with SmartSkin® • New postpartum hemorrhage and palpation module • Monitor and log ventilations and chest compressions feedback on your device or any Windows computer	
12	**1 FEMALE HUMAN WHOLE BODY PLASTINATED SPECIMEN AND 1 MALE HUMAN WHOLE BODY PLASTINATED SPECIMEN** Female Plastinated Cadaver Left Half showing superficial muscles and other right half in deep muscle dissection. Front and back. The specimen displays the skeletal muscle of the whole human body and some cutaneous nerves and superficial arteries. One side of the Specimen displays superficial layers muscles and the other side displays Deep layer muscles. Abdominal cavity: The remained organs are liver, pancreas, stomach (only fundus and pyloric part), duodenum, terminal part of ileum, caecum and vermiform appendix, ascending and descending colons (including left and right colic flexures), sigmoid colon, rectum, spleen, the two kidneys and suprarenal glands, the two ureter, urinary bladder (a window on it to display trigone of bladder), superior and inferior mesenteric arteries. In addition, testis, ductus deferens, seminal vesicle, and penis are remained on a male specimen, while ovary, uterine tube and uterus are remained on a female specimen. The inferior vena cava, renal veins, abdominal aorta, internal and external iliac veins and arteries are remained. The diaphragm, iliopsoas, psoas minor and quadratus lumborum are remained. The superficial and deep layer muscles are displayed on the left and right limbs respectively Male Plastinated Cadaver Whole body specimen with dissected and well exposed central nervous system (brain and spinal cord) This specimen mainly shows nerves and arteries of the whole body.	

	I. Head and neck (In this part, the muscles and parotid gland of head and face are removed to show facial nerve and its branches as well as mandible branch of trigeminal nerve. Part of mandible is removed to show inferior alveolar nerve and mental nerve. The skull remains 2 cm along the sutura and the rest of them are removed. Most of the brain is removed to show intracranial blood vessels, brain stem and the exit points of the cranial nerve.) II. Trunk (Body of the sternum is removed. Both sides of thorax are opened and part of second, third and fourth rib are removed to show bronchus, arteries and veins of lungs, phrenic nerve and sympathetic nerve. Part of obliquus externus abdominis, obliquus internus abdominis, transversus and rectus abdominis as well as intestinal tract in abdomen are removed to show liver, gallbladder, pancreas, spleen, stomach, duodenum and arteries and veins of mesentery and nerves.) III. Back (The second and seventh cervical vertebrae are remained. The first and twelfth thoracic vertebrae are remained as well as the first lumbar vertebra. Spinal nerve and inlet point of sciatic nerve are displayed in this part.) IV. Upper and lower limbs (The left sides of upper limb and lower limb are to show the superficial comprehensive dissection of nerves and blood vessels. The right sides of upper limb and lower limb are to show the superficial and deep comprehensive dissection of nerves and blood vessels.	
13	**PATIENT CARE MANNEQUIN** General Patient Care • Bathing and bandaging activity • Full body • Interchangeable genitalia • Eyes open and close • Realistic eyes for ophthalmic exercises • Realistic urethral passage and bladder for catheterization exercises • Upper and lower dentures for oral hygiene • Soft, realistic face skin, hands, feet, fingers and toes • Simulated ear canal for otic drops and irrigation	

	• Gastrointestinal procedures and enema administration • Stylish wig for haircare exercises and surgical draping • Articulating head, jaw, elbows wrists, ankles and knees. Injection Training • IM injection sites in deltoids, quadriceps and upper gluteal region Heart and Lung sounds • Site specific heart and lung sounds with virtual stethoscope Airway • Tracheotomy placement • Nasal and oral tube placement • NG and OG tube feeding and gastric suction GYN training • Realistic vagina and cervix supports douching and pap smear Other • Detachable and removable internal ribs • Bends and detaches at waist for easy storage • Instruction manual	
***** **Nothing Follows*****		

Additional Requirements:

The technical specification that shall be submitted by the Bidder shall include, among others:

1. *product specifications as supported by brochures or catalogues.*