Schedule of Requirements

**Tender:**

|  |  |  |  |  |
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| **S.No** | **Project Name** | **Location** | **Packages** | **Date and Time of Bid Opening** |
| **1** | **Purchase of Equipment /tools/Furniture/Books for GPI Lakki Marwat** | **Lakki Marwat** | 1. **Chemistry Lab** 2. **Physics Lab** 3. **Woodworking Workshop** 4. **Plumbing & Public Health Workshop** 5. **Machinist** 6. **Computer Lab** | **25-12-2024**  **Bid Submission time: 11.00 am**  **Bid Opening Time:**  **11:30 am** |
| **2** | **Purchase of Equipment/tools /Furniture /Books for GPI Mansehra** | **Mansehra** |
| **3** | **Purchase of Equipment/tools/Furniture/Books for GPI Alpuri Shangla** | **Shangla** |
| **5** | **Up-Gradation of GTVC to GPI in Battagram** | **Batagrame** | 1. **Electrical Technology.** 2. **Civil Technology** 3. **Chemistry Lab** 4. **Chemical and Glassware** 5. **Physics lab** 6. **Computer lab.** |

**\*PLEASE ORGANIZE YOUR BID FOR THE PACKAGE AS FOLLOWS**;

1. *Bidder can bid ITEM-WISE against the Schedule of requirements.*
2. *The Items wise/Equipment must have Minimum Specification acceptable to the Technical Committee of KP-TEVTA; however, the higher specification may be accepted if within the financial limit.*
3. *All bidders must submit the relevant details of bid/proposals duly labelled by a permanent marker with the name of bidder and also to provide documents in soft copies (MS WORD format) on USB drive.*
4. *The Supplier shall write in bold & legible letters “Name of the Project & Items wise” on the envelope.*
5. *The supplier will submit the tender documents properly* ***Computer Typed and each page shall be endorsed and numbered****, along with terms and condition issued by the KP-TEVTA, dully signed by the authorized personnel with company seal; otherwise the bid will not be accepted.*
6. *The prices, including all taxes, should be quoted item-wise in Pakistani Rupees so as to reach the premises of the KP-TEVTA Head Office.*
7. *After Sale service and supply of spare parts must be guaranteed for a period of One year.*
8. *Please list the Ernest Money of this items in the Ernest Money Letter Stamp Paper.*
9. *Bid Processing Fee is Rs. 3,000/-per project.*
10. *The supplier will supply the Items wise won as a result of bidding on FOR basis to GPI Mansehra, Shangla , Lakki Marwat & GPI Battagram.*
11. *National Manufacturers are eligible to bid/quote their manufactured Machinery/Equipment but Branded Machinery/Equipment with Country of Origin/OEM: USA, Europe, Turkey, Japan, Korea will be appreciated.*
12. *Brand of the quoted item(s) shall be exclusively mentioned.*
13. *After Sale service and supply of spare parts must be guaranteed for a period of One year.*
14. *The original Request for Proposal documents duly signed and officially sealed by the bidder must be submitted as a whole with the proposals. Any conditional, ambiguous, incomplete, supplementary, or revised offer after the opening of tender shall not be entertained.*
15. *Any overwriting/crossing, etc. appearing in the offer may be properly signed by the person signing the tender. All pages of the tender must be properly signed & stamped. Offer with any overwriting/use of Blanco shall not be accepted in any circumstances.*
16. *Offers should be valid for FY: 2024-25 from the date of opening of the Tender.*
17. *The successful bidder(s) shall get the equipment inspected at their premises workshop before its dispatch to the indicated Locations.*

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | | | | | | |
| ***List of Physics lab for One Institute*** | | | | | | | | | |
| **S.No** | **Revised Specification** | **QTY (For One Institute** | **Rate per Unite** | | | **Total amount** | |
|  | **Resonance tube apparatus, length 1 meter:**  With Plastic tube 840×25mm mounted on record with 500ml Plastic tube bulb, tuning forks, rubber-padand thermometer | 10 No’s |  | | |  | |
|  | **Sonometer with slotted weights and two wedges:**  Wooden resonance box with two rules long. One each brassand steel wires. Two moveable bridges pulley and fixed screws, slotted weights ½ kg×4,1 kg×4,2 kg×41m. | 10 No’s |  | | |  | |
|  | **Linear Expansion Apparatus:**  Consists of metal rod 500mm L, 4.5 mm dia. Rod enclosed in well-lagged metal tube with 3 tubules for steam inlet, outlet, thermometer  Rod to be investigated supported in steam jacket by detachable rubber bungs at tube ends. Micrometer screw reading to 0.01mm for measuring expansion. Supplied with one each of aluminum, brass, iron expansion rods, with thermometer. | 5 No’s |  | | |  | |
|  | **Steam generator:**  Aluminum vessel with cork lid and retainer on an adjustable hot plate with thermal circuit breaker, volume 250ml and portable | 02 No’s |  | | |  | |
|  | **Sextant:**  Student model,  Comprising 220mm radius,  Withslighter adjustable half mirror and scale 0 to 130 with vernier reading to five minimum in wooden case**.** | 05 No’s |  | | |  | |
|  | **Set of weights:**  Set of precision weights,1g-50g Function and Application Weight set made of polished brass. Equipment and technical data Contains 10 weights: • 2 x 1 g • 2 x 2 g • 2 x 5 g • 2 x 10 g • 1 x 20 g • 1 x 50 g • in plastic storage box Device name Determination of the mass of solid and liquid bodies Determination of the density of solid bodies Determination of the density of liquids Beam balance Finding the density of liquids using a densimeter Forced oscillation and resonance Coupled pendulum systems Determination of the volume of regular and irregular bodies Archimedes principle | 10 No’s |  | | |  | |
|  | **Kundt’s tube with scale and Accessories:**  Transparent acrylic tube with scale and end plates with tubing  nozzles for filling with various gases,built-in speaker at one end,  a bore and guide for accommodating moving piston or probe  Microphone at the other end. Includes retaining clips for mounting  on stands and a connector lead for the speaker, length 1000mm,dia 70mm,tube nozzle 7mm dia.  **Accessories for each set:**  1Probe micro phone with frequency range 20hz-20000hz with  DIN plug for battery box,barrel foot, 1function generator  (230V,50hz),1 whistle,a 1700hz tuning fork,1 bottle of cork powder. | 10 No’s |  | | |  | |
|  | **Hook’s law apparatus with helical spring:**  Pointer and scale graduated in cm and mm hangingweights 6×50gm, 5 helical springs of lengths 120mm, 145mm,  150mm. 147mm,142mm**.** | 10 No’s |  | | |  | |
|  | **Convex lenses:**  Of different focal lengths from 10cm to 50 cm | 30 No’s |  | | |  | |
|  | **Concave lenses:**  Of different focal lengths from 10cm to 50cm | 30 No’s |  | | |  | |
|  | **Concave mirrors:**  Of different focal lengths from 10cm to 50cm | 30 No’s |  | | |  | |
|  | **Convex mirrors:**  Of different focal lengths from 10cm to 50cm | 30 No’s |  | | |  | |
|  | **Fletcher trolley complete set:**  Light metal track 1720×150 min wide with leveling feet covered with stops at either end, aluminum pulley 50mm  dia., clamp for vibrator and automatic Pen release. Metal trolley with three wheels mounted.On ball bearings. Five hooks to accommodate cylindrical masses approximate 350gm. Vibrator 60mm long with clamping works at 5 Hz and 8Hz and Pen holder to take fiber tip type of pen and with tracing ink. | 05 No’s |  | | |  | |
|  | **Single ray projector with accessories:**  Light source for experiments on optics, connecting line 1.5m long with 4mm plug dimension 120mm×70mm dia., magnetic holder for single ray projector 12V, 60VA (230V, 50Hz), Halogen lamp12V, 35W | 02 sets |  | | |  | |
|  | **Multiple ray projectors, magnetic with accessories:**  Light source for optics. Lamp 12V, 55W connecting line 1.5 meter long with 4mm Plug. Dimension 150 × 200 × 50mm3 Transformer 12V, 60 VA9230,50Hz) Halogen Lamp 12V, 55W. | 02 sets |  | | |  | |
|  | **Optical bench complete with all standard accessories:**  **Optical bench:**  Optics Track (1.2 m) rugged aluminum track. The metric tape makes position measurements easy.  **Accessories:**  Light Source has a lighted crossed arrow target with metric scale for focusing images through lenses or using with the concave mirror. Acts as a point light source, 1, 3, or 5parallel rays, or red-green-blue rays.  Lenses:4 - 50 mm diameter. Lens’s focal lengths +100, +200, +250, -150 mm mounted in protective holders. Concave/Convex Mirror: 50 mm diameter plastic mirror with reflective surface on both sides.  Includes "half-screen" upon which the image is focused.  Adjustable Lens Holder: from 19 mm to 75 mm in diameter**.**  Storage Box:Everything fits neatly into the protective storage box, with the exception of the 1.2 meter Optics Track.  1 transparent screen, 1 white screen.  1 pin hole aperture d=1mm  1 pin hole aperture d=6mm | 10 No’s |  | | |  | |
|  | **Electrical calorimeter (1200ml) with accessories:**  Consist of a double walled, heat insulating plastic container with insulating vessel inside made of reflecting glass with heating coil and stirrer  **Accessories:**  Aluminum shot 100g, copper shot 200g, glass shot 100g, granules for filling calorimeter. | 10 each set |  | | |  | |
|  | **Precision hair Hygrometer:**  Consist of a round plastic housing with a human hair  Measuring range:0%----100% relative humidity  Temperature range: 35c-+65% 0C  Reading accuracy: ±5%  Diameter: 100mm | 10 No’s |  | | |  | |
|  | **Differential pulley:**  One piece aluminum with diameter of 38.5 mm & 63.5mm mounted in a metal frame with hook**.** | 10 No’s |  | | |  | |
|  | **Compound lever (Brace version):**  Wooden structure consisting of Front and rear legs, leaver arm, base beam, handle, arms, lever arm, beam sides, brace, feet, hex bolt, washer, fasteners. | 03 No’s |  | | |  | |
|  | **Simple harmonic module/apparatus:**  Consist of a black metal disc, 200mm diameter supported vertically on a clear plastic base fitted with feet. A white marker 13mmdia may be made to follow a circular orbit about the central of the disc. A similar marker move in a slot along thediameter of the disc in phase with the peripheral marker performing SHM when the peripheral marker caused to rotateat uniform speed .The disc is marked with cords and radial lines to assist in locating the relative marker positions. | 1. Nos |  | | |  | |
|  | **Reaction of beam apparatus:**  Bench mounted. This apparatus is designed for simple experiments and demonstrations on simply supported beams. Two spring balances act as supports and enable reactions to be read directly. Three movable load hangers allow loads to be put in a number of positions.Levers can be investigated by suspending the beam from the free standing frame, and holding down the end with a spring balance. | 03No’s |  | | |  | |
|  | **Galvanometer DC:**  Range ± 35 Micro Amp, scale division 1 Micro Amp, Internal resistance 1000 ohm | 5 No’s |  | | |  | |
|  | **Magnets Horseshoe:**  Horseshoe magnet Function and Applications for experiments with magnetic fields. Equipment and technical data • Poles painted red and green. • Magnetic material: coercive 500. • Length of sides: 25 mm. • Section of sides (mm): 8 × 5. • Interior distance between poles: 9.5 mm. | 10 No’s |  | | |  | |
|  | **Center of gravity apparatus:**  Comprises a rod mounted on a base with a suspension screw at the top and four laminas of clear acrylic - 1 each of circular, triangular, square and trapezoidal. Each lamina has suspension holes along their periphery. | 10 No’s |  | | |  | |
|  | **Total amount** | | |  | | |  | |
|  | **Total for One Institute** | | |  |  | | | |
|  | **Total for four Institutes (1x3)** | | |  |  | | | |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | | |
| Chemistry Lab (Glassware) for one Institute | | | | | |
| **S#** | **Revised** | **Quantity (For one Institute)** | | **Rate per Unite** | **Total amount** |
|  | Beaker 50 ml (Pyrex) | 24 No | |  |  |
|  | Beaker 250 Ml (Pyrex) | 24 No | |  |  |
|  | Beaker 500 ml (Pyrex) | 12 No | |  |  |
|  | Beaker 1000 ml (Pyrex) | 12 No | |  |  |
|  | Wash bottle (plastic) | 24 No | |  |  |
|  | Bottle reagent 500ml (narrow mouth) | 6 Dozn | |  |  |
|  | Bottle reagent 250 ml (narrow mouth) | 10 dozn | |  |  |
|  | Bottle Reagent 500 ml (wide mouth) | 6 dozen | |  |  |
|  | Bottle Reagent 3 ltr | 12 No | |  |  |
|  | Burette 50 ml | 24 No | |  |  |
|  | Measuring cylinder 100 ml | 6 No | |  |  |
|  | Measuring cylinder 10 ml | 12No | |  |  |
|  | Crucible Porcelain with lid | 12 No | |  |  |
|  | Cork rubber assorted | 6 doz | |  |  |
|  | Fusion tube | 24 gross | |  |  |
|  | Capillary tube | 10 lb | |  |  |
|  | Centered Glass Crucible lid | 12 No | |  |  |
|  | Dish evaporating (Porcelain 75 | 15 No | |  |  |
|  | Flask Round bottom 500 ml | 10 No | |  |  |
|  | Flask Flat Bottom 3 ltr, | 10 No | |  |  |
|  | Flask Conical 100 ml | 24 No | |  |  |
|  | Flask Filtration 500 ml | 12 No | |  |  |
|  | Funnel Buckner | 12 No | |  |  |
|  | Funnel separating 250 ml | 12 No | |  |  |
|  | Filter paper | 6 Pkt | |  |  |
|  | Glass rods | 24 No | |  |  |
|  | Kips ”s apparatus 1000 ml Litmus paper | 4 No | |  |  |
|  | Litmus paper blue and Red | 12 pkt | |  |  |
|  | Pipette 10 ml | 24 No | |  |  |
|  | Pestle & Mortar glass | 6 No | |  |  |
|  | Tiles Glazed white | 24 No | |  |  |
|  | Test tube Holder | 24 No | |  |  |
|  | Watch glass | 24 No | |  |  |
|  | Ostwald Viscometer | 24 No | |  |  |
|  | Stalagmometer | 24 No | |  |  |
|  | **Total amount** | | |  |  |
|  | **Total for One Institute** | |  | |  |
|  | **Total for four Institutes (1x3)** | |  | |  |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | | |
| Chemistry lab equipment for one Institute | | | | | |
| **S#** | **Revised Specification** | **Quantity Required** | **Rate per Unite** | | **Total amount** |
|  | Electrolyzer 220V, 50HS with platinum electrode and DC power supply. | 2 Nos |  | |  |
|  | Filter paper (whatman No.1) . | 100 sheet |  | |  |
|  | Glass funnel dia: 7.5 cm | 25 Nos |  | |  |
|  | Glass tube: Soda lime length: 150cm Ex-dia:3-4 mm | 10 Nos |  | |  |
|  | Glass rods: (Stirring) Length: 20 cm, dia: 6-7 mm | 25 Nos |  | |  |
|  | Pipette Graduated: 10m, | 50 Nos |  | |  |
|  | Pipette 15ml. | 50 Nos |  | |  |
|  | Stand Tripod (cast iron) Height: 20cm, with circular top, | 25 Nos |  | |  |
|  | Spirit lamp. Metallic medium size. | 25 Nos |  | |  |
|  | Test Tubes: Dimension: 150x12mm, Pyroz. | 200 Nos |  | |  |
|  | Test tube stand (wooden) | 25 Nos |  | |  |
|  | Tongs (Black ended steel) with Bow length: 20cms, / | 25 Nos |  | |  |
|  | Wash Bottle (Polythne) 0.250ml, . | 20 Nos |  | |  |
|  | Wire gauze, . | 50 Nos |  | |  |
|  | Volumetric flask. 100ml, | 12 Nos |  | |  |
|  | Volumetric flask. 250ml, | 12 Nos |  | |  |
|  | Distillation plant: Stainless steel, 220 V, 300V, capacity: 1 gallon. . | 2 Nos |  | |  |
|  | Periodic chart, | 2 Nos |  | |  |
|  | Copper sulphate (anhydrous). | 0.5 kg |  | |  |
|  | Calcium sulphate. | 0.5 kg |  | |  |
|  | Soda Ash. | 0.5 kg |  | |  |
|  | Sodium Bicarbonate. | 2 kg |  | |  |
|  | Spirit Methylated. | 10 liter |  | |  |
|  | Iron Stand with clamp. | 15 Nos |  | |  |
|  | Wooden Stand. | 15 Nos |  | |  |
|  | Thermometers | 4 Pieces |  | |  |
|  | Stirrers | 6 Pieces |  | |  |
|  | Forceps | 1 dozen |  | |  |
|  | PH Paper | 3 boxes |  | |  |
|  | Gas Jar with Iid | 6 Pieces |  | |  |
|  | Hook and scale | 6 Pieces |  | |  |
|  | Pipette pumps | 10 Pieces |  | |  |
|  | Specific gravity bottle | 1 Dozen |  | |  |
|  | Pinch cock | 10 Pieces |  | |  |
|  | Rubber tube | 3 mtrs |  | |  |
|  | Sand paper | 3 Pieces |  | |  |
|  | Copper electrodes | 6 Pieces |  | |  |
|  | Measuring flask/volumetric flask 500ml | 6 Pieces |  | |  |
|  | Measuring flask/volumetric flask 1000ml | 6 Pieces |  | |  |
|  | Spatula | 6 Pieces |  | |  |
|  | Test tube brushes | 2 Dozen |  | |  |
|  | **Total amount** | |  | |  |
|  | **Total for One Institute** | |  |  | |
|  | **Total for four Institutes (1x3)** | |  |  | |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | |
| **Chemical lab for One Institute** | | | | |
| **S#** | **Revised** | **Quantity Required ( For One Institute)** | **Rate per Unit** | **Total amount** |
|  | Nitric Acid | 5 ltr |  |  |
|  | Hydrochloric Acid | 5 ltr |  |  |
|  | Sodium Hydroxide (Pellets) | 2 kg |  |  |
|  | Ammonia liquor | 5 ltr |  |  |
|  | Silver Nitrate | 250 gm |  |  |
|  | Ammonium carbonate | 1 kg |  |  |
|  | Sodium Carbonate | 1 kg |  |  |
|  | Sodium bicarbonate | 1 kg |  |  |
|  | Potassium carbonate | 1 kg |  |  |
|  | Potassium chromate | 1 kg |  |  |
|  | Ammonium sulfide | 1 kg |  |  |
|  | Ammonium Molybdate | 0.5 kg |  |  |
|  | Bismith Nitrate | 1 kg |  |  |
|  | Bismith Chloride | 1 kg |  |  |
|  | Cadmium Nitrate | 1 kg |  |  |
|  | Cadmium chloride | 1 kg |  |  |
|  | Lead Nitrate | 1 kg |  |  |
|  | Lead Carbonate | 1 kg |  |  |
|  | Lead Acetate | 1 kg |  |  |
|  | Sodium Nitropurside | 50 grm |  |  |
|  | Sodium Chloride | 1 kg |  |  |
|  | Oxalic Acid | 1 kg |  |  |
|  | Acetone | 2.5 ltr |  |  |
|  | Carbon Tetrachloride | 2.5 ltr |  |  |
|  | Banzene | 2.5 ltr |  |  |
|  | Toluene | 2.5 ltr |  |  |
|  | Copper sulfate | 1 kg |  |  |
|  | Copper Chloride | 1 kg |  |  |
|  | Zinc Chloride | 1 kg |  |  |
|  | Zinc Sulfate | 1 kg |  |  |
|  | Zinc Carbonate | 1 kg |  |  |
|  | Zinc Granules | 1 kg |  |  |
|  | Magnesium sulfate | 1 kg |  |  |
|  | Magnesium Chloride | 1 kg |  |  |
|  | Magnesium sulfate | 1 kg |  |  |
|  | Cobalt chloride | 1 kg |  |  |
|  | Cobalt Nitrate | 1 kg |  |  |
|  | Cobalt carbonate | 1 kg |  |  |
|  | Nickel sulfate | 1 kg |  |  |
|  | Nickel nitrate | 1 kg |  |  |
|  | Stannous chloride | 1 kg |  |  |
|  | Stannic chloride | 1 kg |  |  |
|  | Phenolphthalein | 250 gram |  |  |
|  | Methyl orange | 1 pack |  |  |
|  | Methyl red | 1 pack |  |  |
|  | Aluminum Nitrate | 1 kg |  |  |
|  | Aluminum sulfate | 1 kg |  |  |
|  | Ethyl alcohol absolute | 2.5 ltr |  |  |
|  | Methyl alcohol | 2.5ltr |  |  |
|  | Sodium phosphate | 1 kg |  |  |
|  | Sodium Tetra Borate (Borax) | 0.5 kg |  |  |
|  | Iodine crystals | 0.5 kg |  |  |
|  | Starch | 0.5 kg |  |  |
|  | Citric acid | 0.5 kg |  |  |
|  | Acid Acetic | 2.5 ltr |  |  |
|  | Ammonium Chloride | 1 kg |  |  |
|  | Antimony Chloride | 1 lb |  |  |
|  | Alcohol Absolute | 1 kg |  |  |
|  | Barium Chloride | 1 kg |  |  |
|  | Bromine | 1 lb |  |  |
|  | Calcium Carbonate | 1 lb |  |  |
|  | Calcium Chloride Anhydrate | 1 lb |  |  |
|  | Cobalt Sulphate | 1 lb |  |  |
|  | Copper Chloride | 1 lb |  |  |
|  | Chemical Label books | 2 doz |  |  |
|  | Ferric Chloride | 2 lb |  |  |
|  | Mercuric Chloride | 250 gm |  |  |
|  | Potassium Ferricyande | 1 lb |  |  |
|  | Potassium iodide | 1 lb |  |  |
|  | Potassium Nitrate | 1 lb |  |  |
|  | Potassium Thiocyanate | 1 lb |  |  |
|  | **Grand Total** | |  |  |
|  | **Total for One Institute** | |  |  |
|  | **Total for four Institutes (1x3)** | |  |  |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | |
| **Chemistry equipment for One Institute** | | | | |
| **S.No** | **Revised** | **Quantity Required( For One Institute)** | **Rate per Unit** | **Total amount** |
| 01 | **PH Meter Portable:**   * PH Range: -2.00~16.00pH: * PH Accuracy: ±0.01pH * MV Range: -1999~1999mV * MV Accuracy: ±1mV * Calibration Points: 2 points * Calibration Solutions: USA (pH4.01, 7.00, 10.01) * Temperature Range: 0~100°C, 32~212°F * Temperature Accuracy: ±1°C * Temperature Calibration: Manual * Temperature Compensation: 0~100°C, 32~212°F * Automatic or Manual * Hold Function : Manual * Memory: 50 data sets with Date/Time stamping * Output: USB Communication Interface * Connector : BNC * Built in battery Luxury III arm stand; * PH Electrode, Temp Probe. | 03 |  |  |
| 2 | **Balance Digital**  Capacity: 2000gm  Sensitivity: 0.1gm  For: 220-240V, 50/60Hz, single phase supplies( Range: 3200gm-3500gm) | 03 |  |  |
| 3 | **Magnetic Stirrer with Hot Plate.**  It’s heating temperature from room temperature to 300 degrees Celsius. Magnetic stirrer built-in the CPU chip, it can control each operation functions of stirrers. The stirrer uses push-button to increase or decrease the stir speeds,  Stirring Volume: 0 to 2000mL Stirring Speed: 0 to 1250rpm Panel Material: Stainless Steel Temperature: ambient to 300 ºC  Timer: 0 to 999 minutes Power Requirements: 220V/50Hz, with internal thermocouple, slimy bar | 03 |  |  |
|  | **Grand Total** | |  |  |
|  | **Total for One Institute** | |  |  |
|  | **Total for four Institutes (1x3)** | |  |  |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | | |
| **PLUMBING & PUBLIC HEALTH ENGG SHOP FOR ONE INSTITUTE** | | | | | |
| **S.No** | **Revised Specification** | **Quantity Required( for one Institute)** | **Rate per Unit** | **Total amount** |
|  | **Pipe Wrench**.  Best quality  18″, 14" ,12″,08″, heavy-duty pipe wrench, adjustable. Tourgh quality alloy steel construction drop forged rust resistant finish with replaceable heel jaws. | 10 No Each |  |  |
|  | **Pipe Reamer.**  Best quality Cap-1″-2″Pipe reamer with handle ratchet type 1″to 2″capacity with burning spiral flutes. | 10 No |  |  |
|  | **Pipe Vice (stand/leg)**  Best quality.  1/8″-2 ½ ″Cap Pipe vice capacity 1/8″to 2 ½″mounted on triangular metha table tray, fitted with three metal folding legs. | 10 No |  |  |
|  | **Pipe Thread Set, (Pipe threading Dic:)**  Best quality.  1/4″to 1-1/4 ″ Pipe thread set (NPT) reversible reversible ratchet handle set to include dies for pipe size (1/4, 3/8, 1/2, 3/4, 1 and 1-1/4) inches | 10 No |  |  |
|  | **Pipe Cutter**  1/4″ to 2″Pipe cutter with heavy duty cutter wheel (capacity 1/4″ to 2″) , Best quality . | 10 No |  |  |
|  | **Cutter Wheel.**  Cutter wheels which fit above cutters, Best quality . | 10 No |  |  |
|  | **Wrenches.** Best quality.  -Local good quality made  08″,10″,12″,Screw Wrench adjustable alloy steel construction drop forged rust resistant finish. | 5 set |  |  |
|  | **Level aluminum**  masons 48″with 2 double plumbs and one double level. Local Best quality. | 2 No |  |  |
|  | **Square Carpenters' Steel, (24”x16”)**  made of stainless steel,  Best quality. | 10 No |  |  |
|  | **Hacksaw.12″**  Hacksaw 10″ to 12″adjustable pistol grip handle rust proof finish, Best quality. | 10 No |  |  |
|  | **Ball Pein Hammer 24 Oz,** hardwood handles 15" long, drop forged alloyed steel head, Best quality. | 10 No |  |  |
|  | **Ball Pein Hammer 16 Oz,** hardwood handles 15" long, drop forged alloyed steel head, Best quality. | 10 No |  |  |
|  | **Hammers Nail.**  16 Oz, bell face, curved (Claw carpenters), Best quality. | 10 No |  |  |
|  | **Screwdrivers.**  16″x ¼ ″ Screwdrivers ¼″x 16″shank plastic handle, vanadium steel, Best quality. | 12 No |  |  |
|  | **Water closet English type,**  with Flush tank and seat cover (Complete Set), Best Quality. | 06 NO |  |  |
|  | **Water closet Indian type,**  Best quality. | 06 NO |  |  |
|  | **Wash Hand Basin.**  Wash hand basin central pillar cock pattern ,Best quality. | 06 NO |  |  |
|  | **Wash Hand Basin.**  2 Pillar cock pattern, Best quality. | 06 NO |  |  |
|  | **Urinal.** , Best quality. | 06 NO |  |  |
|  | **Pillar Cock.**  High neck Chromium plated (CP) Pillar cock, Best quality. | 12 No |  |  |
|  | **Mixer Type.**  Mixer type CP pillar cock, Best quality. | 12 No |  |  |
|  | **Stop Cock,**  CP stop cock, Best quality. | 12 No |  |  |
|  | **Bib Cock,**  CP Bib Cock, Best quality. | 12 No |  |  |
|  | **Waste Coupling,**  Stainless steel, chromium finished, Best quality. | 12 No |  |  |
|  | **Files Round**  12″ 2nd cut, 1/2" dia at widest area, Best quality. | 12 No |  |  |
|  | **Files. Flat**  12″ 2nd cut, 12"x1.5"x0.2", Best quality. | 12 No |  |  |
|  | **Files. Three square/Triangular** 12″ 2nd cut, 12" x 1/2", Best quality. | 12 No |  |  |
|  | **Electric Pipe thread cutting Machine**  with pipe cutter and pipe reamer ½”,to 2” NPT National Pipe Thread  BSP British standard pipe  Mains Electricity, Blades and Dies complete set, safety guards best quality | 03 No |  |  |
|  | **Piller type Drill machine**  3ph Motor power 1.1 kw  With work surface table 475x425mm surface stand 410x325 mm, with two additional drill sets, Best Quality. | 02 No |  |  |
|  | **Pedestal Grinder Machine,**  3-phase motor, Power 1.5 HP, 2800 rpm, 2 discs of 6" dia, Best Quality. | 03 No |  |  |
|  | **Portable/ hand Grinding** & **Cutting Machine/Disc/Cutter** 4” dia. 1800 watt, 6000-11000 rpm, Arbor size: 5/8” and 7/8” disc type grinding cutting and sanding, with all accessories Best quality | 05 No |  |  |
|  | **Air Compressor with Electric Motor**  1 hp, Air compressor 3.35 CFM, 1000 Psi, 100 lit tank, safety valve, draincock, aircock and pressure working gauges, Best Quality | 02 No |  |  |
|  | **Pipe Bender for M.S G.I pipe: Hydralulic Pipe bending** machine, Pressure 13 T, Max Stroke= 250mm, Bending capacity 1/2"to 2", Bending shoes: 1/2", 3/4", 1",1-1/4", 1-1/2" and 2", Pipe wall thickness 2.75 to 4.5 mm. | 02 No |  |  |
|  | **Electric Jack Hammer + Drill machine**  compatible in a singh machine. Input power 900 W, Impact engery 4.25 J, Voltage 230V, weight 4.7 Kg, Tool holder SDS plus, Rated speed 0-800 rpm, Impact rate at rated speed 0-3600 bpm Drilling Dia. Concrete hammer drill bits 6-32 mm, opt. appl. Range concrete, hammer drill bits 14-25mm, having size of 400mm x 226mm, with two additional hammer and drill bits sets, Best Quality. | 05 Sets |  |  |
|  | **Driver Socket Wrench set**  (40 pieces ) ½” to 2”. 40 Pieces Ratcheting socket wrench set, case size 9.75"x1.5"x5", Best Quality | 2 set |  |  |
|  | **Testing Equipment for Fresh** water pipe system leakage testing (manual), Aluminium material Pressure column outer dia 1.10", pressure 2.5 MPa, Best Quality. | 02 No |  |  |
|  | **Hot air Gun**  for PVC welding 50 C0 to 450 C0. 1800 W, complete set, Best Quality. | 03 No |  |  |
|  | **Flat Plier (Electrician),**  Best Quality. | 12 No |  |  |
|  | **Slip Joint plier,**  Best Quality. | 12 No |  |  |
|  | **Aluminum ladder (18 feet):** Portable telescopic aluminium ladder 18', Best Quality. | 03 No |  |  |
|  | **Basin Wrench / sink wrench,** Best Quality. | 12 No |  |  |
|  | **First Aid Box (Plastic)** size 220x270mm with Gloves, Thermometer, bandages, tape, gauzes, wipes, Scissors, tweezers, emergency blanket,, masks, instant cold packets, torch, spirit etc, complete in all respect, Best Quality. | 03 No |  |  |
|  | **PPRC pipe cutter**,  Best Quality. | 12 No |  |  |
|  | **Centre punch 4”,**  Best Quality. | 12 No |  |  |
|  | **Flat Chisel 12”**  Heavy duty flate chiesel 12" long, Best Quality. | 06 No |  |  |
|  | **Steel tap 15 ft,**  Best Quality. | 12 No |  |  |
|  | **Scriber tool,**  length 230mm, steel type, tip hardness 50-60 HRC, end pattern straight and 90 degrees, Best Quality. | 12 No |  |  |
|  | **Oil cane (metal),**  250ml, spout thumb pump, Best Quality. | 36 No |  |  |
|  |  |  |  |  |
|  | **Safety jacket (Plastic, Highways),** Best Quality. | 25 No |  |  |
|  | **Safety Helmet (Plastic),**  Best Quality. | 25 No |  |  |
|  | **Safety shoes with Copper plate toe**, Best Quality. | 25 No |  |  |
|  | **Safety Gloves**, Best Quality. | 25 pairs |  |  |
|  | **Safety Goggles (Plastic**), Best Quality. | 25 No |  |  |
|  | **Grand Total** | |  |  |
|  | **Total for One Institute** | |  |  |
|  | **Total for four Institutes (1x3)** | |  |  |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | |
| **WOOD WORK SHOP PRACTICE FOR ONE INSTITUTE** | | | | |
| S.No | Revised Specification | Quantity Required ( for One Institute) | Rate per Unit | Total amount |
| 1 | **Work Benches.**  Made up of hard wood (sheesham, chine wood)  Local Best quality  1320mmx560mmx838mm Wood tops thickness 32 mm with wooden leg 102mm square. | 10 No |  |  |
| 2 | **Bits Auger.**  6mm to 25mm Bits auger consisting of 13 bits 6mm to 25mm. Local Best quality | 10 No |  |  |
| 3 | **Bits Auger.**  Square hole bit auger  Best quality  Bits made up of tool steel  Double square  6mm to 12.5 mm  Local Best quality  6mm 10mm 12.5mm 19mmMade of tool steel double square. | 10 No |  |  |
| 4 | **Bits Expansive and Adjustable.**  Hinge boring bits  15 to 35mmBits expansive and adjustable, boring from 15mm to 5mm. Local Best quality | 10 No |  |  |
| 5 | **Countersink drill bits**  For brace and wood, 12.5 mm diameter  Local Best quality | 10 No |  |  |
| 6 | **Screw driver bits**  Local Best quality  4.75mmBits screwdriver 4.75mm for brace. | 10 No |  |  |
| 7 | **Screwdriver.**  Local Best quality  6mmScrewdriver, 6mm for brace and wood. | 10 No |  |  |
| 8 | **Screwdriver bits.** Local Best quality  8mm,15mmBits screwdriver, for brace& wood. | 10 No |  |  |
| 9 | **Gimlet bits. Local Best quality**  2 Size No2,3 Size No3,4 Size No4,5 Size No5  6 Size No6,7 Size No7,8 Size No8 | 10 No |  |  |
| 10 | **Bits Brace.200mm Bits** brace 200 mm sweep ″Alligator″ Jaw chromed. Local Best quality | 10 No |  |  |
| 11 | **Bits (Machine)**.9.5mm 12.5mm 9mm, 25mm Bits Machine for wood. Local Best quality | 10 No |  |  |
| 12 | **Twist Drills.1.5mm to 13 mm**  Twist Drills straight shank. Local Best quality | 05 No |  |  |
| 13 | **Hand Drill , Local Best quality**  Voltage = 200 V  50 Hz  Power = 600-800 W  Chuck = keyless / keyed  Made up of hardened steel  Drilling capacity: for wood = 30 mm, for metal = 13 mm  Speed 3000 rpm  Body: high quality plastic  CE/ANSI/ISO 9001  Battery hand drill (rechargeable) | 05 No |  |  |
| 14 | **Vice. Local Best quality**  Made of cast iron/ high density steel  Jaw width x opening = 10-12’’ x 10-14’’  Throat depth = 3-5 ‘’  Overall length = 20-30 ‘’  Quick release mechanism  Swivel base | 05 No |  |  |
| 15 | **Curving set chisel**  Made of high carbon steel  Blade shape: curved with moderate radius between 20-30 deg.  Blade length = 4-6 ‘’  Blade width = ½-1’’  Handle material = hard wood (hickory or ash)  Handle length = 6-8’’  Bent gauge  Made of high carbon steel  Blade shape: bended approx.. 45 deg  Blade length = 4-6 ‘’  Blade width = ½-1’’  Handle material = hard wood (hickory or ash)  Handle length = 6-8’’  u-tool skew chisel  Made of high carbon steel  Blade shape: skew with u-shaped cross-section  Blade length = 4-6 ‘’  Blade width = ¼ -3/4’’  Handle material = hard wood (hickory or ash)  Handle length = 6-8’’  veining tool  Made of high carbon steel  Blade shape: V-shaped  Blade length = 4-6 ‘’  Blade width = 1/8-1/4’’  Handle material = hard wood (hickory or ash)  Handle length = 6-8’’  Handle design = taper for control  forged stool blades  Made of high carbon steel  Blade shape: flat, round and angled  Blade length = 6-10‘’  Blade thickness= 1/8-1/4’’  Handle material = hard wood (hickory or ash)  Handle length = 6-8’’ | 6 No |  |  |
| 16 | **Chisels**  Made of high carbom steel  Edge type: beveled mirror finish  Blade LxWxAngle:75-150mm x 6,12,19,25 x25 deg  Handle material: hard wood/best quality plastic  Handle length = 100-150 mm  Ferrule : solid brass  Storage: protective case/roll up pouch  Brand: Narex, stanely, Bahco | 12 No |  |  |
| 17 | **Wood chisel**  Bench chisel, paring chisels, mortise chisel, firmer chisel.  Made of high carbon steel  (58-62 HRC)  Handle material: hard wood/best quality plastic  Blade bevel 25 deg.  Ferrule : brass  Safety: edge protection grip  striking surface: steel | 10 No |  |  |
| 18 | **Marking Gauge**  - Beam length: 150-200 mm  - Stock dimensions: 70× 50× 20 mm  - Thumbscrew diameter: 20 mm  - Scribe pin diameter: 3-4 mm  Mortise Gauge  - Beam length: 200-250 mm  - Stock dimensions: 80× 50× 20 mm  - Adjustable scribing pins (2): 3-4 mm diameter each  - Thumbscrew diameter: 20 mm  Depth Gauge  - Beam length: 150-200 mm  - Base dimensions: 50× 30× 10 mm  - Vernier scale resolution: 0.05 mm or finer  Sliding Bevel Gauge  - Blade length: 150-250 mm  Handle dimensions: 100× 40× 20 mm  - Locking screw: Brass, 20 mm diameter  Combination Square  - Ruler length: 300 mm  - Ruler width: 25 mm  - Handle dimensions: 120 mm × 80 mm × 20 mm  - Spirit level: Integrated, bubble size 8-10 mm  Angle Gauge (Digital)  - Beam length: 200-250 mm  - LCD display: 50 mm × 25 mm  - Angle measurement range: 0-360 degrees  - Accuracy: ±0.2 degrees  Thickness Gauge (Feeler Gauge)  - Blade lengths: 100-150 mm  - Blade thicknesses: From 0.05 mm to 1.00 mm, in various increments  - Total blades: 10-20 pieces | 10 No |  |  |
| 19 | **Polished hammer**  Heat treated  Overall length = 12-14’’  Head wt=450-560gm  Face dia=1-1.5’’  Made of high carbon steel  Hammer handle : hard wood/fiber glass  Face : slightly convexed/flat | 10 No |  |  |
| 20 | **Plane Overall length 14-15’’**  Blade width=2-2.5’’  Plane Made of cast iron  Blade made of high carbon steel  Handle knob: hardwood (rosewood, beech) | 10 No |  |  |
| 21 | **Plane**. **Hand operated**  L = 22-24’’  Width = 2 ½-3’’  Height of knob & tote =6’’  Blade width = 2 1/2-2 5/8’’  Plane Made of cast iron  Blade material: high carbon steel  Handle knob made of hardwood  Adjustable frog  Anti-rusting coating  Chips breaker/cap iron | 10 No |  |  |
| 22 | **Rabbit plane**  Made of high cast iron  Handle made of hardwood  Overall LxWxH = 10x2.5x5’’  Blade width = ½-2’’  Blade thickness = 1/8-1/4’’  Sole thickness = ¼”  Adjustable & removable blade  Sharp bevel cutting edge  Fence to guide plane  Screw base adjustment | 10 No |  |  |
| 23 | **Smooth plane**  Body material: cast iron  Blade material: high carbon steel  Handle material= hardwood  Overall LxW= 9-10’’x2-2.5’’  Blade WxT = 2-2.5’’x0.12-0.14’’  Polished finishing | 10 No |  |  |
| 24 | **Plane** Body material: cast iron  Blade material: high speed steel  Handle material= hardwood  Base dimension LxWxT= 10-12’’x4-6’’x0.2-0.3’’  Blade LxW=3-4’’ x 0.5-1’’  Polished finishing | 10 No |  |  |
| 25 | **Block plane**  Overall LxWxH = 6-7’’x2-2.5’’x2-3’’  Cast iron body  Blade made of high carbon steel  Blade WxT = 1-1.5’’x 1/8-3/16’’  Angle 12 deg or 20 deg  Grip + non-slip sole | 10 No |  |  |
| 26 | **Rules.**Made of hadwood/metal  LxW=1000-1500mm x 40-60 mm  Beveled / squared edges  Hanging sole  End caps  Non-slip base | 10 No |  |  |
| 27 | **Shrink rule**  Smooth finish  Laser engraved marking  Metric/imperial  LxWxT = 12,18,24’x1-1.5’x0.08-0.10’  Straight edge  End hole Grip | 10 No |  |  |
| 28 | **Coping saw**  Steel frame 40x40 mm with welded joints  LxWxH = 1500x750x900 mm  Powder coated  Smooth finish  Work surface  LxWxT = 1500x750x25 mm, MFD made  Saw mounting:  300x300 mm, include heavy duty clamp | 10 No |  |  |
| 29 | **Coping saw**  High carbon steel or bi-metal  Blade dimension: LxWxT = 6.5x1/8-1/4x0.020-0.035’  TPI = 15-18  Sets 0f 10 or 20 blades | 10 No |  |  |
| 30 | **Back saw**  Blade length = 10-14 ‘’  Blade made of High carbon steel or SS  Blade T = 0.02-0.03’’  TPI = 12-15  Hardwood handle  Back reinforcement = brass/steel  Overall wt= 0.68 – 1.13 kg  Handle grip Guard | 10 No |  |  |
| 31 | **Compass saw**  LxWxT = 6-12’’x1/2-3/4’’x0.02-0.04’’  High carbon steel  TPI 10-14 cross-cut  Wt=0.23-0.45kg  ISO certified | 10 No |  |  |
| 32 | Saw. Local Best quality  660mm Hand Saws, coarse cut 8 TPI | 10 No |  |  |
| 33 | Saw. Local Best quality  140mm & 660mm Saw hand rip. | 10 No |  |  |
| 34 | Saw.300mm 14 TPI. Local Best quality | 10 No |  |  |
| 35 | Saw. Local Best quality  225mmHand saw coarse cut. | 10 No |  |  |
| 36 | Mitre Box.608mm x 127mmMitre box including eleven point stiff back saw, adjustable angle capacity at right angle 200 mm at 45 degree, 125mm. Local Best quality | 10 No |  |  |
| 37 | Miter Machine.660mm x 100mm Mitre machine including vice clamps stiff back fine tooth saw for picture frame and molding cutting. Local Best quality | 10 No |  |  |
| 38 | Screw Driver. Size 1, 2, 3, 100mm shank 6mm blade 150mm shank 6mm blade 225mm shank 6mm blade. Screw drivers. Local Best quality | 10 No |  |  |
|  | **Grand Total** | |  |  |
|  | **Total for One Institute** | |  |  |
|  | **Total for four Institutes (1x3)** | |  |  |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | | |
| **Machinist Trade for one Institute** | | | | | |
| **S.No** | **Revised Specification** | **Quantity Required**  **( for One Institute)** | **Rate per Unit** | **Total amount** |
| **1.** | **Universal Milling Machine**  Convincing arguments`, quality, efficacy  Multi-purposes range of application  Solid machine structure  Heavy, solid model made of high-grade meehanite casting  Dovetail sideways  Ali slide ways hardened  Central lubricating  Main switch with protective motor switch, right /left-hundred rotation switch emergency-stop button  Largely dimension hand wheels with scale  Machine lamp supplied as standard  Coolant equipment supplied as standard  Price-efficient and stable value  **CAPACITY** Drilling capacity(max.) ø50mm Milling capacity cutter head(max.) ø125mm Milling capacity end mill cutter(max.) ø25mm SPINDLE HOLDING FIXTURE Spindle holding fixture ISO40(DIN2080,DIN69871) Sleeve diameter no sleeve Sleeve travel 0 DRILL-MILL HEAD Head rotation 360° Spindle speed 40-1600rpm Z-axis travel manual 380mm CROSS TABLE Table (LxW) 1120x260mm X-axis travel automatic 600mm Y-axis travel automatic 270mm Table feed(9 steps) 24-402mm/min T-slot size/distance/number 14mm / 63mm / 3 Distance spindle-cross table(max.) 90-520mm ELECTRIC SUPPLY Motor 2.2KW 380V-50Hz Motor coolant pump 0.04kw  Standard Accessories  High Quality milling head  Wit chip tray  All the bed way with splash guard  With operation control box  With manual lubrication oil pump  With tool and tool box  With draw bar  X/Y-Axis gear driver power feeder  Coolant system  Halogen lamp | 1 No |  |  |
| **2.** | **Lathe Machine**     * Ideal for processing for steel, non-ferrous metals and plastics * Electro-magnatic foot brake reduce downtime * Hardend and polished toothed gear also in feed drive * Practical solid machine featuring a lead screw and feed rod * Grey cast iron machine bed inductive hardened and precisely polished * State-of the art spindle bedding with high quality angular ball bearings * Machine base in heavy cast iron construction * Tailstock can be adjusted +/-5 mm for taper turning * Ideal for technical colleges, repair shops and training purposes * Easy smooth and precisely adjustable speed and feed settings * Pulling out chip tray allows for minimum space requirements * Removable bridge for processing of work piece with a large diameter * Optimal price benefit ratio, modern design * Serially equipped with slip clutch   Capacity  Distance between centers 1000 mm  Center height 200 mm  Swing over bed ø400 mm  Swing over gap ø506 mm  Swing over cross slide ø240 mm  Bed width 210 mm  Spindle  Spindle bore ø52 mm  Spindle nose fixture DIN55029,D1-5  Speed range (12)45-2000 rpm  Longitudinal feed (27)0.06-2.78mm/r  Cross feeds (22)0.0.01-0.72mm/r  Feeds and threads  Metric thread (36)0.8-14 mm  Inch thread (30)2-28 thread 1”  Max. Section of tool 20x20 mm  Tailstock  Diameter of tailstock sleeve ø45 mm  Travel of tailstock sleeve 100 mm  Taper of tailstock sleeve MT4  Electrical data  Motor power 2.4 kw/2.0 kw  **Standard Accessories**  3 jaw Chuck K11-200mm /D5  Independent K-72-200mm/D5  Steady rest  Follow rest  Coolant device  Face plate 320 mm  4 – way tool holder  Micrometer longitudinal fence  Thread dial  Halogen lamp  Morse taper drill sleeve  Change gear  2 dead centers  Foot brake  Tools | 1 No |  |  |
| **3** | **Live Center MT4** | 1 No |  |  |
| **4** | **2-Axis Digital Read Out** | 1 No |  |  |
| **5** | **Tapet Turning Attachment (Depend on specific model and manufacturer)** | 1 No |  |  |
| **6** | **Shaper Machine**  Max stroke length 460mm 18" Max horizental travel of working table 485mm 19"  Max vertical travel of working table 350mm 14"  Size of working table 420,300,16.5",12"  Max vertical travel of tool holder 140mm 5.5" Max rotation angle of cutter holder 0-90 degree Stroke per minute 12-70  Speed changing of the sliding 1-3  Machine gear speed 3Motor 2-HP-956 RPM-to Cam Switch | 1 No |  |  |
| **7** | **Power Hacksaw**  HIGH SPEED HACK SAWING MACHINE  FEAUTURES  Capability of sawing off Round bars, Square bars, tubes & Profiles  >Rigid Saw Frame  > Hydraulic Mechanism  > Swiveling Vice Clamps to accommodate jobs upto 45 degree  > Strong T-Slotted vice base  > Cooling Mechanism with sheet metal coolant sump  >Protection covers are provided for V-Belts  Tested according to ISO Standard  Provided with 2 Hp Motor  SPECIFICATIONS  CUTTING CAPACITY  Round Bar Square Har Flat  160 x 160 mm 180mm  Cutting Spired  Stroke 100 Stroke 160mm  Dimension of Saw Blade  450x 32 x 160mm  Vice Swivel Angle 45 Degree  Motor Power 2/15 HP/kw  Coolant Pump 0.15/01 1 HP/Kw  STANDARD EQUIPMENT  1 Coolant pump with sump & Fitting  2 Clamping Vice with handle  3 V-bell covers  4 Saw blade  5. Electric equipment 400 V 5% 50 c/s  6 Set of servicing tools  7 Greave Gun  8 operation Manual | 1 No |  |  |
| **8** | **Pillar Type Drill Machine**  Specification  Chuck 20mm  Spindle stroke 120mm  Spindle taper MT4  Speed change 12  Speed 50/60Hz 150-2450/180-2940rpm  Swing510mm  Table size 470x420mm  Base size 580x430mm  Column 92mm  Motor power 1100W  Total height 1680mm 1720mm | 1 No |  |  |
| **9** | Surface Grinding Machine  Max. width to be ground 220 mm 220 mm  Max. length to be ground 470 mm 520 mm  Max. height to be ground 350 mm 350 mm  Table size (W×L) 210×450 mm 200×520 mm  Grinding wheel Wheel sizes 200×13×31.75 mm 200×20×31.75 mm  Grinding wheel Speed 3450 (60HZ) 2850 (50HZ) r/min  Machine weight 920 kg  With all standard accessories | 1 No |  |  |
| **10** | **Pedestal Grinding Machine**  Base made of steel  Voltage 380V-50Hz 500watt  Motor S2+30min : 2850 min-1  Wheel size dia 250x32x32mm  Protection grade IP 20  Packing size 580x365x345  NW/GW 33/35kgs | 1 No |  |  |
| **11** | **Bench Vice with Bench**  Made of cast iron/steel  Jaw width 6’’  Jaw opening6’’  Throat depth = 2-5’’  Achme type screw thread  Length of handle 6” SAFETY STOP: Prevents slide separating from body SWIVEL BASE: Three mounting points and a 120° rotation for more flexible positioning of the work piece Bench features:  Made of hardwood (wood)  LxWxH = 4’x2’x2.5’  Bench having wheels  Storage drawers | 1 No |  |  |
| **12** | **Steel Ruler**     Clear readings crack resistance light weight  Length = 1 ft | 1 No |  |  |
| **13** | **Vernier Caliper**  High precision vernier caliper 4-way measurement  Mono-block solid slider model Made of hardened stainless steel  Chromed scale with laser engraved graduations The scale shows both mm and inch value Measuring surface is micro-lapped  Supplied with leather-look wallet Optional plastic box  Range 0-150mm / 0-6" Resolution 0.05mm - 1/128" Length of jaws (A) 40mm | 1 No |  |  |
| **14** | **Vernier Height Gauge**  Vernier Height Gauge  Range 0-12”/0-300mm Accuracy ±001” Resolution .0005”(0.01mm) [.0002”(0.005mm) Switchable)] | 1 No |  |  |
| **15** | **Vee Block with Clump**  Size: 100x80x80mm Range of shafts (Ød): 7~80mm Parallelism of V grooves to top and bottom sides: 5µm Squareness of V grooves to front and back sides: 5µm Height difference of a matched pair: 5µm V-blocks Hardened to HRC60±2 V groove on the top for large shafts V groove on the bottom for small shafts except 6896-13 Hold cylindrical workpieces for inspection and machining | 1 No |  |  |
| **16** | **Centre Punch**  Acc. to DIN 7250. Chrome-molybdenum-vanadium air hardening steel 45CrMoV7. Carefully hardened and tempered along the full length. Striking heads inductively tempered. Working edge polished and clear varnished. \* not standardised.  100-12 Gedore Germany/Japan/UK  Length (L, L1):- 120 mm  Tip Diameter D1:- 5 mm  Packing Unit:- 10 Piece  Width Across Flat of Shaft (s):- 12 mm  Weight:- 0.091 kg | 1 No |  |  |
| **17** | **Scriber**  Double Pointed Scriber Double-headed design: the metal scribe adopts a double-headed design, , straight tip, 45-degree tip and 90-degree tip, to meet your different needs | 1 No |  |  |
| **18** | **Divider**  High hardened steel  Overall length = 150-200 mm  Max opening =100-150 mm  Lockable wing for repeat measurements | 1 No |  |  |
| **19** | **Flat Screw Driver Set**  Color coded handle for identification of sizes  Insulated handle for electrical work  Bi-material (PP+TPR) soft grip handle providing Excellent comfort Chrome Vanadium (Cr-V) blade for durability. Magnetic tips for easy pick up and screw locator  Three-sided handle allowing more torque with anti-slip and anti rolling features reducing handle slippage. Ergonomic design with finger point in neckdown. Area for precise control. Built-in hang hole for easy storage. Screw tip identification on the handle for organization.   1. 3mmx 75mm 2. 3mm x 125mm 3. 5mm x 100mm 4. 6.5mm x 150mm 5. 8mm x 200mm **6-** 8mm x 250mm | 1 No |  |  |
| **20** | **Philips Screw**  soft grip handle providing. Excellent comfort Chrome Vanadium (Cr-V) blade for durability. Magnetic tips for easy pick up and screw locator. Three-sided handle allowing more torque with anti-slip and anti rolling features reducing handle slippage. Ergonomic design with finger point in neckdown. Area for precise control. Built-in hang hole for easy storage. Screw tip identification on the handle for organization.   1. 3mmx 75mm 2. 3mm x 125mm 3. 5mm x 100mm 4. 6.5mm x 150mm 5. 8mm x 200mm **6-** 8mm x 250mm | 1 No |  |  |
| **21** | **Tap & Die Set**  Made of HSS  40Pcs Metric Tap Wrench and Die Pro Set M3-M12 | 1 No |  |  |
| **22** | **Screw Pitch Gauge 60º** | 1 No |  |  |
| **23** | **Screw Pitch Gauge 55º** | 1 No |  |  |
| **24** | **Radius gauge 1-7,7.5-14mm** | 1 No |  |  |
| **25** | **Combination Set** Combination Set 300mm/12inch Range 180 degrees Three measuring heads are attached to the stainless steel ruler, allowing versatile measurements on various types of work pieces Square head, protractor head and centrehead For various measuring and marking applications Stainless steel rule with engraved graduations 4 Items in set | 1 No |  |  |
| **26** | **Allen key Set**  High grade steel  Cr coated for corrosion resistance  Hex Key Set 10pc S/arm MM  Size = 1.5, 2, 2.5, 3, 4, 5, 5.5, 6, 8, 10mm Set of 10 pieces | 1 No |  |  |
| **27** | **Double Ended open Spanner 6-32mm**  High grade steel  Cr coated for corrosion resistance  12 x Spanners: 06-07, 08-09, 10-11, 12-13, 14-15, 16-17, 18-19, 20-22, 21-23, 24-26, 25-28, 30-32mm | 1 No |  |  |
| **28** | **Ball Peen Hammer 500 gm**  Select clear lacquered wooden hickory handle Hardened and tempered steel head  Fully polished head  Ball end, for riveting and poll used for normal strike | 1 No |  |  |
| **29** | **Cross Peen Hammer 500 gm**  Handle length L=2’’  Handle material = hardwood  Handle shape = octagonal/ oval           Width:4.00 (in)           Height:1.00 (in) | 1 No |  |  |
| **30** | **Marking hammer 250 -500 gm**  Head width = 50 mm, H = 25 mm,  Overall length = L = 300 mm  Handle length = 250 mm , dia = 30mm  Compatible with interchangeable marking stamps, i.e., letter, symbols and numbers.  Head Shape and Dimensions: Flat | 1 No |  |  |
| **31** | **Ruber Hammer**  Head dia = 2’’  Handle material = hard wood / fiber glass  Wt = 0.45 kg  L = 10’’, | 1 No |  |  |
| **32** | **Number Punch Set& Letter Punch Set**  Tip Size (mm) 5 mm   * Material: Hardened carbon steel * Quantity: 27 Pcs/Set * Letters: A-Z * Color: Black * Number 0-9 * Material: Hardened carbon steel * Punch letter size: 5mm * Quantity: 9Pcs/Set * Color: Black | 1 No |  |  |
| **33** | **Flat /Round/Half Round/Tri Square/Square files**  **Size 10”** | 1 No |  |  |
| **34** | **Needle File Set**  Needle File Set Size 5 X 140mm Set of six pieces | 1 No |  |  |
| **35** | **Key File Set**  Handy files known as "key files" are excellent for use on wood, wax and other soft materials. Shapes are flat, round, three-square, warding, square and half-round. wooden handles are 2" long. The double cut is approximately a cut 0 with an overall length of 6” | 1 No |  |  |
| **36** | **File Brush** material FILE CLEANER  Normal Quality  Saves time and money  Easy cleaning  Long service life  For faster work | 1 No |  |  |
| **37**  **38** | **Flat Chisel**  Size:22mm\*16mm\*250mm  Material:45# carbon steel Heat treatment  **Cross Cut Chisel**  Size length 125mmize  Cutting egde width 5mm  Striking / surface length x width 14\*9mm | 1 No  1 No |  |  |
|  |  |
| **39** | **Grooving Chisel**  Cutter thickness 3mm  Overall length 150mm | 1 No |  |  |
| **40** | **Reamer 4,6,8,10, 12 mm**  Reamer 4,6,8,10, 12 mm Sturdy construction Efficient performance Effective | 1 No |  |  |
| **41** | **Electric metal cutting saw**  1000 W  355mm  Blade 14’’  Speed = 1500 rpm | 1 No |  |  |
| **42** | **Dies Handles**           Hardened and tempered jaws.           Shiny black finish.           General tool for handy tapping.           High Quality Tool for Hand Tapping Operation.           Smaller Sizes available in Zinc Die Casting.           Large sizes above 3/4” available in Steel Casting | 1 No |  |  |
| **43** | **Drills Bit Set**  Drills Bit Set 25 twist drill bits Made of high speed steel Hand-guided and stationary drills. Long lifetime. Low risk of breakage due to excellent elasticity. Suitable for all power tool brands. Stored in a rugged metal box for tool  protection and a clean layout. | 1 No |  |  |
| **44** | **Drill Bit Set**  Drills Bit Set 25 twist drill bits Made of high speed steel Hand-guided and stationary drills. Long lifetime. Low risk of breakage due to excellent elasticity. Suitable for all power tool brands. Stored in a rugged metal box for tool  protection and a clean layout. | 1 No |  |  |
| **45** | **Drill Set 1 to 6 mm with Difference 0.1 mm**           Hss Drill Bit Set For Wood, Plastic And Aluminum           Ideal For DIY, Home And General Building / Engineering Using           Containing sizes:, 1mm, 1.5mm, 2mm, 2.5mm, 3mm           Material: High Speed Steel with Titanium coated | 1 No |  |  |
| **46** | **Centre Drill 2.5, 3.0 mm**  Made of Carbide  SS Tungsten Solid Carbide Cobalt Double Head Center Drill Bit 1/1.5/2/2.5/3/3.5/4/5/6mm 60 Degree Angle Drill Bit, | 1 No |  |  |
| **47** | **H.S.S tool Bits Different Size**  TiN coating  Size 1/4 x 6 5/16 x 6 3/8 x 6 1/2 x 6 5/8 x 6 3/4 x 6  Lathe tools, or tool bits as they are sometimes called, are the cutting tools that are used for turning and facing work on the lathe.           The most popular lathe tools are those made of high-speed tool steel (HSS).           They can be used for machining most materials including wood, plastic, aluminum, brass and free-machining steel.           These tools will retain their hardness at temperatures up to 1000° Fahrenheit (588° C.). For this reason, depth of cut, cutting speed and feed rates are important.           The big advantage of high-speed steel tools is the ease with which they can be sharpened. | 1 No |  |  |
| **48** | **Morse Taper Gauge set MT-2, MT-3, MT-4**  Hardened steel  Smooth finish  Material is solid, not easy to break.           High strength and hardness.  Product name: MT2 MT3 MT4  Specification:  1PCS - Morse Connecting rod  1PCS - Drill Chuck  1PCS - Wrench | 1 No |  |  |
| **49** | **Oil Cane**  Made of stainless steel  Seamless construction  Lead type  Diameter = 3.5’’  Sturdy handle  Non-slippery base having certain grip           An Oil Can is a very handy tool that holds oil, and also lets you lubricate machines through its thin nozzle tip. | 1 No |  |  |
| **50** | **Tool Centre Gauge**  Base length = 150 mm, H = 30 mm, W = 50 mm           Very Handy Gauge For Grinding & Setting Thread Cutting Tools.           Made From Stainless Steel.           Satin Chrome Finish.           Permanently Deep Etched Graduations.           Edge Profile Ground.           Useful to find number of threads per inch by means of graduations in 14ths, 24ths and 32nds of an inch. | 1 No |  |  |
| **51** | **Hand Vice**  Achme threaded  Jaw Opening 28 mm Jaw Width 50 mm Nett wight 0.55 kg | 1 No |  |  |
| **52** | **Adjustable Wrench 12”**  Forged chrome vanadium steel is strong and durable  Handle hole for tethering, hanging or storage Laser etched jaw scale for easy size identification Polished chrome head and chrome plated body for anti-corrosion protectionprotection | 1 No |  |  |
| **53** | **Try Angle**  Item Name Squares Colour Black  Length (MilliMeter) 200mm Handle Length 124mm | 1 No |  |  |
| **54** | **Counter Sink**  2-5 is suitable for countersink 2-5mm hole, the maximum can be countersunk 10mm | 1 No |  |  |
| **55** | **Counter Bore Different Size**  **Specification:**  Type: Counterbore End Mill  Material: High Speed Steel  Coating: TiN Coated  Size: M3 M4 M5 M6 M8 M10 M12 M14 M16 | 1 No |  |  |
| **56** | **Twist Drill Grinding Gauge**  High quality steel  LxWxT = 150x50x8 mm           Suitable for drill bits up to a diameter of 50 mm. | 1 No |  |  |
| **57** | **Safety Goggle**  Supple and lightweight PVC frame as well unique air outlet valve design. High-impact polycarbonate lenses have high transparency comfortable for wearing.  Elastic headband  Packed by poly bag | 1 No |  |  |
| **58** | **Diamond Dresser with Holder**  This round diamond dresser is a common dresser for your grinding wheels | 1 No |  |  |
| **59** | **Acme Thread Gauge**  Material:stainless steel  ◆ Scales Engraving Type: Laser Engraving  ◆ Weight: 45g  ◆ Size in Inch: L x W x H: 3.40'' x 1.63'' x 0.07''  ◆ Size in Metric: L x W x H: 86.4 x 41.3 x 1.75mm  ◆ Transition: 1cm=10mm=0.39inch  ◆ Measuring range:  Screw Thread Angle: 29 Deg.  Threads Per Inch: 1-10 | 1 No |  |  |
| **60** | **Tool Center Gauge**  ool Center Gauge Material Aluminum Color Silver Thread Angle 30 Degree Weight Upto 50 gram | 1 No |  |  |
| **61** | **Drill Drift**  High hardness Lathe Drill Morse Taper Drift Carbon Steel Sleeves Straight Morse Taper  MTMT2 | 1 No |  |  |
| **62** | **Combination Pliers**  High quality chrome vanadium steel  Overall length = L = 8’’  Rust resistant  Lead oxide  Insulation for electrical usage  Light weigth           Carbon steel hardened and tempered           The jaws and cutting edges are induction hardened           Heavy duty two-tone soft grip handles with slip guards | 1 No |  |  |
| **63** | **Tool Box**  LxWxH = 36x18x24 ‘’  Box having Wheels  Corrosion resistant Includes 5 tray WxDepthxH = 16x16x4’’  Able to support 500 lbs Metal tool box Durable and long lasting Made up of elegant material | 1 No |  |  |
| **64** | **Plain Milling cutter Diffrent Size.100mmx75mm,100x50,150mmx80,150x60**  TiAlN coated           Arbor Hole Diameter 26mm           Brand Name F&D Tool Company           Cutting Angle 45 degrees           Cutting Direction Multi Directional           Finish Type Uncoated (Bright)           Material High-Speed Steel/carbide | 1 No |  |  |
| **65** | **Side and Face Cutter Diffrent Size. 100mmx10mm,75mmx10mm,150mmx12mm, 150mmx10**  TiAlN coated           Material hss           Color black           Brand bjs | 1 No |  |  |
| **66** | **Shell &Mill**  HSS/carbide  Dia= 50-100 mm  Shank dia= 16-32 mm  Overall length = 100-300mm  No of flutes = 4-6 helix angle = 30-45 deg  TiN/TiAlN coated           Taper: DIN69871           Runout: <0.005mm           Taper Torlerabce: <MT3           Balancing: G6.3/15000           Surface Treatment: Blackening           Application: for mounting milling cutters with transverse or longitudinal groove. | 1 No |  |  |
| **67** | **Colet chuck with Colet**  HSS alloys  Accuracy = 0.005 mm  Anti-corrosion coating Optimum 18-piece Ø2-20mm ER32 clamping sleeve set with socket, ISO40 mounting cone! Easy-to-use, high quality ER32 socket set with key, socket, M16 / M16 and BT40 clamping bolts and 18 Ø2-20mm sockets, all packed in a convenient metal storage box. DIN ISO 15488. The seat has an ISO40 mounting cone. | 1 No |  |  |
| 68 | End mill Cutter Titanium coated/HSS/Cobalt, Overall length = 2-8 ‘’, shank dia= 1/8’’, ¼’’, 3/8’’, ½’’, 5/8’’, ¾’’, flute length = ½-3’’, helix angle = 30-45 deg, no of flutes = 2/3/4/6, dia of cutter = 1/32-2’’, ANSI/ISO. >> Improved hardness and stability with 2x to 5x service life >> Twice the machining performance >> Improved workpiece finish >> Cylindrical shank and lateral lugs >> Version with 2 cutting edges for milling keyways/fixing grooves and milling out the workpiece centre >> Vertical or lateral milling possible >> Version with 4 cutting edges and 30° right-hand twist for good chip removal in normal to hard materials 12-part 3352250 >>6 end mills, short version · Version with 2 cutting edges. >>DIN 1835 B (Ø12x73, Ø10 x 63, Ø8 x 61, Ø6 x 52, Ø5 x 52, Ø4 x 51 mm) >>6 end mills, short version · Version with 4 cutting edges. DIN 1835 B (Ø12 x 83, Ø10 x 73, Ø8 x 61, Ø6 x 57, Ø5 x 57, Ø4 x 55 mm) 20-part 3352255 >> 10 end mills DIN 327 D · Short version · 2 cutting edges DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm) >> 10 end mills DIN 844 B · Short version · 4 cutting edges DIN 1835 B, (3/4/5/6/8/10/12/14/18/20 mm) | 1 No |  |  |
| **69** | **Involute Gear Milling Cutter Different Size**  TiN/TiAlN coated  Securely packed  Compliance with ISO/ANSI           Module Number: 1.75           Material: HSS           Outer Diameter: 60mm           Inside Bore: 22mm           Pressure Angle: 20 degree | 1 No |  |  |
| **70** | **Key Way Cutter Siz, 4mm,5mm,6mm,7mm,8mm,9mm10mm**  HSS  Cutting angle = 90 deg.  TiN/TiAlN coated  Compatible with m/c spindle and arbor  Cutter equipped with all safety features  Additional: arbor, spacers & bushes           Parallel shank keyway milling cutter according to GB1112-81 production. Accuracy levels are e8 and d8.           2 Flutes Keyway End Mill Cutter           Usually used to be assembled on milling machine           Can milling of copper, aluminum, tool steel, cast iron, etc           High toughness, abrasion resistance, high-speed cutting for the high hardness           Can processing directly or fine processing to the heat treatment mold | 1 No |  |  |
| **71** | **Micro Meter Different Size**  Satin chrome finishing  1. Range 0-25 Accuracy0.004 Resolution 0.01 2. Range 25-50 Accuracy 0.004 Resolution 0.01 | 1 No |  |  |
| **72** | **Inside Micro Meter**  Stainless steel  Frame width = 20 mm  Thimble dia = 25 mm  Measuring face dia = 8 mm  Using the measured diameter Design standard, compact, lightweight, easy to use. Accuracy: ± 2μm The split: 0.01mm | 1 No |  |  |
| **73** | **Dial Vernier callipers**  Dial Verniercallipers Dial Caliper 0-150mm Capacity 0-150mm Resolution 0.02mm Shockproof dial caliper  Rapid movement with thumb wheel 4 way measurement  Hardened stainless steel rack Measuring surface is micro-lapped | 1 No |  |  |
| **74** | **Dial Indicator with Magnetic Stand**  Accuracy = 0.01 mm  Base dimension = 65x65 mm  Overall height = 150 mm  Arm length = 150 mm  Permanent magnet with ON/OFF switch  Made of SS with protective cover  Dial Indicator 0-10mm Range 0-10mm Resolution 0.01mm Diameter 58mm/ear Magnetic Indicator Stand With powerful on/off magnetic base Magnetic force 80kg/ 175LBS Universal mode which can be used for indicators with or without "lug" on back plate Extra rigid | 1 No |  |  |
| **75** | **Digital venire calipers**  **Feature**  Range = 0-150 mm  Accuracy =+- 0.02mm  Made of SS  Operating temperature = 0-40 oC  Apprxwt = 300 gm.  Easy to read LCD display Ground micro-lapped measuring surfaces Thumb wheel for fine adjustment Functions: mm/inch conversion, on/off, zero-setting, battery low indication SR44 Battery  Capacity Resolution Jaw   0-150mm 0-6" 0.01mm | 1 No |  |  |
| **76** | **First Aid box**  Dimension = LxWxH = 12x8x6’’  Sturdy handle  Symbol of first Aid box           Classic Empty First Aid Box           Red plastic case | 1 No |  |  |
| **1.** | **Universal Milling Machine**  Convincing arguments`, quality, efficacy  Multi-purposes range of application  Solid machine structure  Heavy, solid model made of high-grade meehanite casting  Dovetail sideways  Ali slide ways hardened  Central lubricating  Main switch with protective motor switch, right /left-hundred rotation switch emergency-stop button  Largely dimension hand wheels with scale  Machine lamp supplied as standard  Coolant equipment supplied as standard  Price-efficient and stable value  **CAPACITY** Drilling capacity(max.) ø50mm Milling capacity cutter head(max.) ø125mm Milling capacity end mill cutter(max.) ø25mm SPINDLE HOLDING FIXTURE Spindle holding fixture ISO40(DIN2080,DIN69871) Sleeve diameter no sleeve Sleeve travel 0 DRILL-MILL HEAD Head rotation 360° Spindle speed 40-1600rpm Z-axis travel manual 380mm CROSS TABLE Table (LxW) 1120x260mm X-axis travel automatic 600mm Y-axis travel automatic 270mm Table feed(9 steps) 24-402mm/min T-slot size/distance/number 14mm / 63mm / 3 Distance spindle-cross table(max.) 90-520mm ELECTRIC SUPPLY Motor 2.2KW 380V-50Hz Motor coolant pump 0.04kw  Standard Accessories  High Quality milling head  Wit chip tray  All the bed way with splash guard  With operation control box  With manual lubrication oil pump  With tool and tool box  With draw bar  X/Y-Axis gear driver power feeder  Coolant system  Halogen lamp | 1 No |  |  |
|  | **Grand Total** | |  |  |
|  | **Total for One Institute** | |  |  |
|  | **Total for four Institutes (1x3)** | |  |  |

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| **Govt: Polytechnic Institute, Shangla,Mansehra and Lakki Marwat** | | | | | |
| **Computer Lab** | | | | | |
| **S. No** | **Revised Specification** | **Required QTY** | **Rate per Unit** | **Total amount** |
|  | **Desktop System**  **Processor:** 12th Gen Intel Core i5-12400 (cores 06, cache 18 MB,) Turbo boost frequency: 4.4 GHz  **RAM:** 08 GB DDR4, 3200 MHz  **Storage:** 1TB HDD + 256 GB SSD/NVMe  **Graphics Card:** Intel UHD Graphics 730  **Network:** One RJ-45  **USB:** Four USB 3.2 Gen 1 ports, Four USB 2.0 ports  **Audio:** One global headset jack, One audio line-out port  **Video:** One DisplayPort, One HDMI  **Ethernet:** Realtek RTL8111HSD          **Wireless:** 2.4 GHz/5 GHz+ Bluetooth  **Accessories:** Dell Wired Keyboard & Mouse  **LED:** Branded 18.5’’ LED  **Warranty:** One Year Local Warranty  **Installation: Yes** | **25 No** |  |  |
|  | **65” LED Specs**  **Size:** 65"  **OS:** Android  **RAM/ROM:** DDR3-2133: 1G Bytes or Above  **Certification:** CB, HDMI, Dolby Audio, CTS (Google Official Certification), Netflix  **Display Type:** 4K LED UHD  **Display Resolution:** 3840×2160  **UHD Support:** Yes  **Refresh Rate:** sixty or Above  **Dynamic Contrast:** Yes  **Connectivity Internet Link:** 2.4GHz dual-band Wi-Fi 802.11 b/g/n or Above  **HDMI:** Yes  **USB:** Yes  **A/V IN:** Yes  **Headphone:** Yes  **Speaker Type:** Integrated Speaker Boxes (Bottom Side)  **Warranty:**                        One Year Local  **Installation: Yes**  **Bluetooth = yes** | **02 No** |  |  |
|  | **LaserJet Printer**  **Memory:** 64MB  **Processor:** 400MHz  **Connectivity:** Hi-Speed USB 2.0 port  **Print speed:** Black (normal, A4): Up to 20 ppm  **First page out:** Black (A4, ready): As fast as 8.3 seconds; Black (A4, sleep): As fast as 18 seconds  **Resolution:** Black (best): Up to 1200 x 1200 dpi; Black (normal): Up to 600 x 600 dpi  **Duty cycle (monthly, A4):** Up to 10,000 pages  **Wireless Connectivity:** Yes  **Recommended monthly page volume:** 100 to 1,500 pages.  **Warranty: 1 year Local** | **02 No** |  |  |
|  | **Photocopier Specs**  Copy, Print, Scan, Wireless  **Continuous output speed:** 27 PPM or better  **Operation Panel:** 4-Line LCD or better  **Warm up Time:** 19 seconds  **First Page output Time:** 6.5 seconds  **Memory:** 512MB or Above  **ARDF capacity:** 50 Sheets  **Multiple copying:**Upto 999 Copies or Above  **Resolution:** 600 dpi or Above  **Zoom:** From 25% to 400% in 1% steps  **Print Resolution:** 600 x 600 dpi  **Network Interface:** Standard: Ethernet (1000/100/10BASE), USB 2.0 Type B x1, Wireless LAN (IEEE 802.11a/b/g/n/ac)  **Wi-Fi:** Yes  **Scanning Speed:** Mono: 18ipm Color: 6ipm  **Resolution:** 600 dpi  **Compression Method:** MH/MR/MMR, JPEG  **File Formats:** Single Page TIFF, Multi Page TIFF, Single Page JPEG, Single Page PDF, Multi Page PDF  **Scan Modes:** Email, Folder, USB  **Paper Handling Size:**  A3, A4, A5, A6, B4, B5, B6  **Paper Input Capacity:** Standard: 500 sheets Maximum: 1,600 sheets  **Paper Output Capacity:** 250 sheets  **Warranty:** One Year Local  **Installation: Yes** | **01 No** |  |  |
|  | **Grand Total** | |  |  |
|  | **Total for One Institute** | |  |  |
|  | **Total for four Institutes (1x3)** | |  |  |