**GENERAL INSTRUCTIONS**

(1) Sealed tenders are invited for the procurement of laboratory items of HBTI Kanpur. The tender documents can be bought from the Store Purchase Section, Harcourt Butler Technological Institute Kanpur. Interested tenderers may download the same from the website and submit their offer along with **Tender fee of `1000/- each** (In form of Crossed Demand Draft issued by any Nationalized Bank in favour of Director H.B.T.I., Kanpur). While submitting your offer mark Tender No. and due date on the envelope.

(2) Quotations received without Tender fee will not be considered.

(3) No request for the extension of the due Tender date will be considered.

(4) Each Tender consisted of various schedules and EMD for each schedule is mentioned separately. Tenderers may submit their proposals for **one or more schedules** along with the respective EMD (In form of Crossed Demand Draft issued by any Nationalized Bank in favour of Director H.B.T.I., Kanpur).

(5) The offer submitted for each schedule should be complete in all respect and price quoted for each schedule should be **FOR destination HBTI Kanpur**.

(6) Late/delayed offers will not be accepted.

(7) Tenders received before the deadline shall be opened in the presence of attending Tenderers/their authorized representatives on the same day at scheduled time and venue.

(8) Corrigendum, if issued any for the Tender, shall form part of the Tender document. Corrigendum will be posted only on HBTI Kanpur website (www.hbti.ac.in). Tenderes are requested to visit HBTI Kanpur website regularly and note the corrigendum/amendments to the tender without fail and submit the offer accordingly.

(9) All other terms and conditions are as per the Institute rule.

(9) The Director reserves the right to cancel any or all Tenders without assigning any reason.

**For HBTI Kanpur**

**Tender No.: 12/SPS/PHY/2016 Dated: 14.03.2016 due on 04.04.2016 by 01:30 pm**

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| **Schedule No.** | **Set-Up** | **Contents /Specifications/Quantity** | **EMD (`)** |
|  | B-H Curve set-up using CRO (SK-1010) | BH Curve power supply-01  U core\_01  I core\_01  Coil 300 turns (pair)-01  BNC Cable\_02  Connecting cable-01  Multimeter -01  CRO suitable for the above | 1000 |
|  | Newton’s Ring | Newton’s Ring Unit-01  Sodium light source with transformer -01  Bridge type Travelling Microscope (L.C.= 0.01 mm)-01  Wooden block -01  Plano convex lens with plane glass plate-01 | 600 |
|  | Spectrometer set-up with grating and Hg source | Spectrometer (L.C,. = 30 “)-01  Hg –Source with transformer -01  Diffraction Grating (15000 LPI)-01  Micrometer Slit-01 | 600 |
|  | Energy Band gap of semiconductor (Using Four Probe Technique) | Four Probe Expt Set-Up -01  Oven -01  Ge Crystal -01  Four Probe Arrangement – 01  **Four Probe Experimental set-up**  **Voltmeter:** 3 ½ digit, 7-Segment LED, auto polarity & decimal indication.  **Voltage range:** X1 (0-2.00 mV DC), 4mm socket  **Current Display:** 3 ½ digit, 7-Segment LED  **Current Range**: 0-20mA DC, 4mm socket  **Oven Supply:** 45 V AC (switch position Low)  60V AC (switch position HIGH)  **Oven Connector:** 5 Pin, DIN Type  **Input Voltage:** 220 V, 50 Hz AC  **Oven:**  **Heating Element:** 35 ohm, 75 Watt  **Oven Supply:** 45 V/ 60V AC  **Oven Connector:** 5 Pin, DIN type  **Ambient Temperature:** 175 0C  **Fuse:** 2A  **Thermometer:**  **Type:** Mercury  **Temperature range:** 0-200 0C  **Least Count:** 1 0C  **Length:** 300 mm approx.  **Four Probe Arrangement:**  **Four Probe:** Spring type  **Probe Spacing:** 25 mm  **Crystal :** Ge Wafer, P-type  **Crystal size:** 12 x 14 x 0.5 mm (L xW x Thickness)  **Resistivity:** 1 ~ 10 ohm-cm  **Orientation:** <100>  **Connection:** 4 mm safety socket | 600 |
|  | Millikan’s Oil drop Experiment | Millikan Apparatus -01  Digital Stop watch -01  Oil atomizer -01  **Specifications:**  Input Range: 220 V AC (50 Hz)  **Plate Voltage:** 0-500 V Dc  Changeover Switch: b/w +ve, -ve and zero fill  Plate distance: 5+/- 0.2 mm  Magnification: 30 x  Linear Field of Vision: >= 3mm  Scale Division: 2 +/- 0.01 mm.  Objective lens : 100 lines / mm | 1000 |
|  | Plank’s Constant | Plank’s Constant apparatus-01  Oven-01  LED red-01  LED yellow-01  **Specifications:**  Selector switch  **Selector Switch at VI position:**  3 ½ digit, 7-Segment LED, auto polarity & decimal indication.  Voltage Range: 0.0000-2.000 V  Current Display: 3 ½ digit, 7-Segment LED  Current Range: 0-2000 mA  **Selector Switch at TI position:**  Current Display: 3 ½ digit, 7-Segment LED  Current Range: 0-20 mA  **Temperature Display:** 3 ½ digit, 7-Segment LED  **Temperature Range:** Room Temperature to 60.0 0C  **Oven:** Heater pin4 & 5. Temperature pin 1&2  Oven connector: 5 pin, Din type  LED Connector: 3 pin, DIN type  Input Voltage: 220 V, 50 Hz AC  Fuse: 1 A, 250 V | 400 |
|  | Franck-Hertz Experiment | Franck-Hertz unit – 01  Neon tube with mount-1  Current sensor (+/- 100 mA)-01  Voltage Sensor(+- 10 V)-01  Flexible plug lead red-02  Flexible plug lead black-03  Flexible plug lead yellow-01  **Specifications:**  Plate current Display: 3 ½ digit LED  Plate Voltage: 1.2-12 V, Display 3 ½ digit LED  Screen Grid (G2) Voltage: 0-80, Display 3 ½ digit LED  Control Grid (G1) Voltage:0-10 V, Display 3 ½ digit LED  Filament Voltage: 0-9 V Display 3 ½ digit LED  Tube Connectionm: 4mm socket  Voltage Inputs from DAC 1: 4mm safety socket  Voltage output 10V: 4mm safety socket  Current output 100nA: 4mm safety socket  Mode: Manual  Current gain and offset adjustment knob | 1800 |
|  | Stefen’s Law by Electrical Method | Voltmeter digital 0-15 V DC  Ammeter Digital: 0-1 A  Tungsten Bulb in dark Background  Rheostat suitable for above (0-100 ohm) | 400 |
|  | e/m Magnetron Method | e/m set up complete with power supply, (Omega make)  solenoid with turns 3000 | 600 |
|  | Desktop Computer | I - 7 Series, latest version | 1000 |