**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-01U core\_01I core\_01Coil 300 turns (pair)-01BNC Cable\_02Connecting cable-01Multimeter -01CRO suitable for the above | 1000 |
|  | Newton’s Ring | Newton’s Ring Unit-01Sodium light source with transformer -01Bridge type Travelling Microscope (L.C.= 0.01 mm)-01Wooden block -01Plano convex lens with plane glass plate-01 | 600 |
|  | Spectrometer set-up with grating and Hg source | Spectrometer (L.C,. = 30 “)-01Hg –Source with transformer -01Diffraction Grating (15000 LPI)-01Micrometer Slit-01 | 600 |
|  | Energy Band gap of semiconductor (Using Four Probe Technique) | Four Probe Expt Set-Up -01 Oven -01Ge Crystal -01Four 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 -01Digital Stop watch -01Oil atomizer -01**Specifications:**Input Range: 220 V AC (50 Hz)**Plate Voltage:** 0-500 V DcChangeover Switch: b/w +ve, -ve and zero fillPlate distance: 5+/- 0.2 mmMagnification: 30 xLinear Field of Vision: >= 3mmScale Division: 2 +/- 0.01 mm.Objective lens : 100 lines / mm | 1000 |
|  | Plank’s Constant | Plank’s Constant apparatus-01Oven-01LED red-01LED 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 VCurrent Display: 3 ½ digit, 7-Segment LEDCurrent Range: 0-2000 mA**Selector Switch at TI position:**Current Display: 3 ½ digit, 7-Segment LEDCurrent 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&2Oven connector: 5 pin, Din typeLED Connector: 3 pin, DIN typeInput Voltage: 220 V, 50 Hz ACFuse: 1 A, 250 V | 400 |
|  | Franck-Hertz Experiment | Franck-Hertz unit – 01Neon tube with mount-1Current sensor (+/- 100 mA)-01Voltage Sensor(+- 10 V)-01Flexible plug lead red-02Flexible plug lead black-03Flexible plug lead yellow-01 **Specifications:**Plate current Display: 3 ½ digit LEDPlate Voltage: 1.2-12 V, Display 3 ½ digit LEDScreen Grid (G2) Voltage: 0-80, Display 3 ½ digit LEDControl Grid (G1) Voltage:0-10 V, Display 3 ½ digit LEDFilament Voltage: 0-9 V Display 3 ½ digit LEDTube Connectionm: 4mm socketVoltage Inputs from DAC 1: 4mm safety socketVoltage output 10V: 4mm safety socketCurrent output 100nA: 4mm safety socketMode: ManualCurrent gain and offset adjustment knob | 1800 |
|  | Stefen’s Law by Electrical Method | Voltmeter digital 0-15 V DCAmmeter Digital: 0-1 ATungsten Bulb in dark BackgroundRheostat 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 |