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Date-11 /12/2018

**Tender Ref. No-- SSVV/DST-FIST/TF-32,33,35-37/2018/04**

**TENDER DOCUMENT FOR SUPPLY AND INSTALLATION OF HIGH VACUUM THIN VACUUM COATING UNIT WITH DIGITAL THICKNESS MONITOR, PHYSICS LAB EQUIPMENTS AND TRINOCULAR MICROSCOPE WITH CMOS CAMERA AND ADAPTER**

<b>S. No</b>	<b>Content</b>
(1)	<b>Schedule of Tender</b>
(2)	<b>Tender Notice</b>
(3)	<b>Terms and Conditions of tender</b>
(4)	<b>Technical Specifications (Annexure-IA )</b>
(5)	<b>Format of Technical Specifications Compliance Sheet (Annexure-IB )</b>
(6)	<b>Tender acceptance letter Form (Annexure- II)</b>
(7)	<b>Format For Manufacturer's Authorization Letter to Agent (Annexure-III)</b>
(8)	<b>Details of the Firm offering this Quote (Annexure-IV)</b>
(9)	<b>Warranty format (Annexure V)</b>
(10)	<b>List of Govt. Organizations /Dept. Where same nature of work is performed (Annexure VI)</b>
(11)	<b>Format of Financial bid (Price Bid)</b>
(12)	<b>Check list with Technical bid/ (Financial bid) Price Bid</b>

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Date 11/12/2018

Tender Ref. No-- SSVV/DST-FIST/TF-32,33,35-37/2018/04

**(1) Schedule of Tender**

Principal S.S.V.P.G. College, Hapur U.P.245101 invites Sealed and separate quotations **Under DST-FIST Project for teaching facility**, from the manufacturer, authorized distributors/agents for Supply & Installation of High Vacuum Thin Vacuum Coating Unit with Digital thickness monitor, Physics lab equipments and Trinocular Microscope with CMOS Camera and adapter. The details are as follows:

S.No.	Name of Equipment	Technical Specification	EMD	Tender cost
1A	High vacuum thin film vacuum coating unit	Annexure 1A	7000/-	500/-
1B	Digital Thickness monitor		5000/-	500/-
2	Physics Lab Equipments		2000/-	500/-
3A	Trinocular Microscope			
3B	CMOS camera with Adapter			

Tender Document upload (Publish) date/time: 11/12/2018

Document Sale/download Start Date: 11/12/2018

Document Sale/download End Date: 31/12/2018

Last Date of Submission of Tender: 31/12/2018 up to 16:00 hrs.

Date of opening of Tender (Technical Bid): 04 /01/2019 at 13:00 hrs.

**Type of Tender: Two Bid Systems. (Rule 163 GFR 2017)**

Mode of EMD: Bidders should send EMD in form of DD (Refundable without any Interest) in favour of "Principal, S.S.V. P.G. College", Hapur U.P. 245101.

Tender Fees: Non refundable in form of DD in favour of "Principal, S.S.V. P.G. College", Hapur

**NOTE:-**

1. If the tender is not opened on the above date, due to unforeseen circumstances, then the next working day will be consider as tender opening date.
2. The bidders who fail to submit the required tender fee and EMD, then their techno commercial bids will not be considered for opening.
3. S.S.V. College, Hapur is not bound to accept the lowest bid and may reject any bid or any part of the bid without assigning any reason therefore.
4. If a Bidder wants to quote for more than one set of equipment then he will submit separate quotations in separate envelope along with Tender fees and EMD as given above with requisite documents.

**PRINCIPAL/CO-ORDINATOR**

**DST-FIST, S.S.V. P.G. College, Delhi Road, Hapur U.P.245101**

**Contact No./ Email Address- 01222316818/ ssvcollege1951@gmail.com**

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**TENDER NOTICE**

**Tender Ref. No: SSVC/DST-FIST/TF-32,33,35-37/2018/04**

Date 11/12/2018

Principal, S.S.V.P.G. College, Hapur U.P.245101 invites Sealed and separate quotations **Under DST-FIST Project for teaching facility**, from the manufacturers, authorized distributors/agents for Supply & Installation of High Vacuum Thin Vacuum Coating Unit with Digital thickness monitor, Physics lab equipments and Trinocular Microscope with CMOS Camera and adapter in two parts, —Part A (Technical Bid) and —Part B (Price Bid). Quotations completed in all respects along with technical and price bids should reach the office of the undersigned on or before by 31/12/2018 up to 16:00 hrs. by Post or courier. Technical Bids will be opened 04/01/2019 at 13:00 hrs. in the presence of available bidders.

The detailed terms & conditions, name of item with technical specifications etc. can be downloaded from the website [www.ssvcollege.org](http://www.ssvcollege.org). All other amendment/modification/Corrigendum in future will only be published on the website [www.ssvcollege.org](http://www.ssvcollege.org)

**PRINCIPAL/COORDINATOR**

**FIST-DST**

**S.S.V. P.G. College**

**Delhi Road, Hapur U.P.245101**

**Contact No./ Email Address- 01222316818/ ssvcollege1951@gmail.com**

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Tender Ref. No: SSVC/DST-FIST/TF-32,33,35-37/2018/04

Dated: 11/12/2018

**Terms and conditions**

1. **Preparation of Bids:** The technical and financial bids should be quoted separately and put in different sealed envelopes marked "Technical bid" and "Financial bid" as applicable. These separate bids envelopes are to be put in an outer envelope which should also be sealed.
2. The technical and financial bids should be submitted in original. The financial bid should include the cost of main equipment/item and its accessories. If there is any separate cost for installation etc. that should be quoted separately.
3. Each individual sealed envelope as well as the outer envelope should be marked with the following reference on the top left hand corner: "appropriately as **Tender for supply of .....(Name of Equipment and S.No.) under DST-FIST Project for Teaching Facility** (Tender Ref. No. SSVC/DST-FIST/TF-32,33,35-37/2018/04 dated 11/12/2018).
4. The printed literature and catalogue/brochure giving full technical details should be included with the technical bid to verify the specifications quoted in the tender.
5. The rates should be quoted in figures (typed or printed) and cutting should be avoided. The final amount should be in figures as well as in words. If there are cuttings, they should be duly initialed, failing which the bids are liable to be rejected. The tenderer shall certify that the rates being quoted are not higher than those quoted for any Govt. deptt. or Institution. Further if above quoted item is available on Government e-Marketing (GeM) then the rates charged in this tender are not more than rates available on Government e-Marketing (GeM) .

**NOTE-**

The Technical Bids will be opened on 04/01/2019 at 13:00 hrs. **Financial bids/Price Bid of only those bidders will be opened whose technical bids are found suitable by the committee appointed for the purpose** The date & time for opening of Financial Bids will be informed later on to the technically qualified

bidders. In case the date mentioned above is declared Government Holiday, the date shall automatically be shifted to next working day.

6. The bidders or their authorized representatives may also be present during the opening of the Technical Bid, if they desire so, at their own expenses.

7. In exceptional situation, an authorized committee may negotiate price with the qualified bidder quoting the lowest price before issuing the purchase order.

8. Any bids received after 16:00 hrs. on 31 /12 /2018 shall not be considered. Tenders received within the stipulated period only are considered. The institute shall not be responsible for any postal/courier delay. **The tender documents should be sent through speed post /registered post/ courier only. The postal address for submitting the tenders is:**

**PRINCIPAL**

**S.S.V. P.G. College**

**Delhi Road, Hapur U.P.245101**

**9. Pre-qualification criteria:**

Bidders should be the manufacturers, authorized distributors/agents are eligible to submit bids. All offers other than those from the manufacturers should be supported by an authority letter from the manufacturers or attested copy there of authorizing the firm to tender on their behalf. An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well. (Ref. Annexure-III)

10. The Vendors must have executed same nature of work in the last 3 years. The user list of such institutions, with name of equipments/date and the cost may also be supplied with the bids. (Ref. Annexure-VI)

11. While sending rates, the firm shall give an undertaking to the effect that “the terms /conditions mentioned in the Inquiry Letter/Tender Notice against which the rates are being given are acceptable to the firm”. In case the firms do not give this undertaking, their rates will not be considered.(Tender acceptance letter) (Ref. Annexure-II)

12. All disputes shall be subject to Hapur Jurisdiction only.

13. All tenders in which any of the prescribed conditions is not fulfilled or any condition is put forth by the tenderer shall be summarily rejected.

14. **EMD (if applicable otherwise certificate to be provided for exemption):** The tenderer should submit an EMD amount through DD in favour of Principal S. S. V. College Hapur. **The Technical Bid without EMD would be considered as UNRESPONSIVE and will not be accepted.** The EMD will be refunded without any interest to the unsuccessful bidders after the award of contract. The bank draft must be enclosed in the envelope containing the technical bid.

15. The bidders shall keep their bid valid for minimum 120 days from the date of opening of the financial bid.

**16.** Bidders should go through the tender terms, conditions and specifications carefully and fill in the attached compliance statement accurately and unambiguously. They should ensure that all the required documents are furnished along with the bid.

**17. Acceptance/ Rejection of bids:** The Committee reserves the right to reject any or all offers without assigning any reason and it not bound to accept the lowest bid. The college at its discretion may change the quantity/quality/parameters/upgrade the criteria/drop any item(s) or part thereof at any time before placing the order. In case of any dispute, the decision of College shall be final and binding on the bidders/ tenderers

**18. Performance Security (Performance Bank Guarantee):** Performance Security has to be submitted by the successful bidder within one week from the date of the purchase order. Performance Security will be 10% of the ordered value. Performance Security may be furnished in the form of Bank Guarantee (Principal, S.S.V.P.G. College, Hapur) from any Nationalized Bank and Performance security should remain valid for a period of two months beyond the date of completion of all contractual obligations. **No interest will be payable by college on the performance Security deposited.**

**19. Delivery & installation Period and Liquidated Damage:** The ordered materials/work must be supplied & installed/completed in all respects are required to be delivered and installed within the period stipulated in the purchase order failing which liquidated damages of 1% per week or part thereof for the delayed period subject to maximum of 5% of the total value of the order shall be deducted from the invoice of the supplier.

**20. Consumables/spares:** All hardware & software including drivers, device interface cards/network adaptor card must be pre-installed & pre configured in the computer /equipment provided. Licensed version of system software should be provided in CD (with up-gradable version), if such system is also a part of supply. Manual - Hard copies of instruction/operation/service manuals should be supplied.

**21.** List of important Consumable/ Spares and parts having sufficient shelf life for trouble free operation of three years should also be provided.

**22. Terms of Payment:** Payment will generally be made within 4-6 weeks only after delivery and satisfactory installation, testing, commissioning etc. This must be specified in the tender/quotation. **Advance payment is not admissible.**

Each page in the bid document must be numbered properly and duly signed & sealed by the bidder on every page of the bid.

**23. Manuals and Drawings:** Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications.

**24. Site Preparation:** The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete details regarding space and all the other infrastructural requirements needed for the equipment,

which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter

**25. Insurance:** For delivery of goods at the purchaser's premises, the insurance shall be obtained by the supplier

**26. Installation & Demonstration:** The supplier is required to done the installation and demonstration of the equipment within 2-3 weeks of the arrival of materials at the **S.S.V. College, Hapur** site of installation, otherwise the penalty clause will be the same as per the supply of materials. In case of any mishappening /damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. **S.S.V. College Hapur** will not be liable to any type of losses in any form.

**27. Training:** The Supplier is required to provide free training to the designated Purchaser's technical and end user personnel's to enable them to effectively operate the total equipment.

**Warranty:**

**28.** Bidder must give the comprehensive **One years** on-site warranty as required from the date of successful installation and running of Equipment at the **S.S.V. College Hapur** and also give the warranty as per format. (**Annexure V**). After the warranty period is over, Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) up to next two years should be quoted as well separately.

**29. Governing Language:** The contract shall be written in English language. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language

**30. Defective Equipment:** If any of the equipment supplied by the tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions the **College** may consider "banning" the supplier.

**PRICES :The Prices quoted (ONLY IN INR) should be inclusive of all taxes or duties, packing, forwarding, freight, insurance, delivery and commissioning etc. F.O.R. at S.S.V. College Hapur at destination site.**

31. Nothing extra shall be paid on any account. In the price bid/financial bid, the vendor should clearly mention the final price breakup i.e. ex-work price/FCA price, FOB price, CIP/CIF price & FOR S.S.V. College Hapur price, as applicable in their bid.

**DOCUMENTS COMPRISING THE BID:** The bids prepared by the bidder shall comprise of (1) Technical Bid and (2) Financial Bid:

**32. Technical Bid:** To qualify in the Technical Bid the firm should have the minimum eligibility criteria as under and the firm in this regard must submit the following documents in support of their eligibility criteria:

1) The technical bid should be accompanied by Demand draft of Rs 500/ (five hundred only Non-refundable) against tender fee and Demand Draft of Rs(As given for each set of equipment)..... for EMD in the form of Demand Draft (as given in tender schedule) should be prepared separately and drawn in favour of **“Principal, S.S.V.P.G.College, Hapur.**

2) Copy of Firm registration, PAN Card, GSTIN.

3) Duly filled format of Technical compliance sheet as per Annexure – IB.

4) Original Catalog/Brochure and supporting documents for technical compliance of quoted Model.

**5) Duly Signed Tender documents and their Annexure from I to VI along with supporting documents etc. with seal and signature.**

**(II) Financial Bid:** The financial bid shall contain:

(a) Price Bid Form [As per format] – **Price must be quoted as per format in INR only in case of imported items as well specified; failing which tender shall be summarily rejected.**

**PRINCIPAL/COORDINATOR  
FIST-DST  
S.S.V. P.G. College  
Delhi Road, Hapur U.P.245101**



## Annexure- 1A

### Technical specifications of

### (S.No.1A) High Vacuum Thin Film Vacuum Coating Unit

(All points mentioned in the technical specifications needs to be complied for bidding considerations)

<b>High Vacuum Thin Film Vacuum Coating Unit</b>		<b>Compliance</b>
<b>Technical Specifications</b>		Please attach supporting documents
<b>1</b>	<b>Direct Drive Rotary Pump is having the special quiet &amp; Vibration free positive anti- suck back with in built, compact &amp; Light weight, effective gas ballast, low oil charge, air cooled &amp; high water vapour handling capacity with free air displacement.</b>	
1.a	Capacity	250 LPM
1.b	Meter Cube per hour	15
1.c	Ultimate vacuum when measure on a Mcleod Gauge with Gas ballast closed	$>1 \times 10^{-3}$ mbar
1.d	Ultimate vacuum when measure on a Mcleod Gauge with Gas ballast opened	$>5 \times 10^{-2}$ mbar
1.e	Inlet connection	KF 25
1.f	Motor	HP motor Single Phase 1/2
<b>2</b>	<b>Oil diffusion pump</b>	
2.a	Nominal Diameter	114 mm
2.b	Ultimate Vacuum	$>1 \times 10^{-6}$ mbar
2.c	Effective Pumping speed	280 lit/sec
2.d	Critical Backing Pressure	$3.5 \times 10^{-1}$
2.e	Type of jet	Fractionating
2.f	No OF Stages	5
2.g	Oil charge	100 cc
2.h	Heater Rating	500 Watts
2.i	Water @ 20 to 25 deg. C	3 to 4 (litre/min)
<b>3</b>	<b>Plumbing Lines &amp; Valves</b>	
3.a	A High Vacuum Valve of 4 ½" (SS) size to provide to achieve maximum through put from the pump and provides isolation of the diffusion pump from exposing it to atmosphere when the chamber/load is exposed to atmosphere. The valve should be conveniently placed for easy operation. Plumbing lines are made of stainlees steel of 1" NB that incorporate 2nos of butterfly valve, Air admittance & Needle valves through this needle valve one can adjust the flow rate	
<b>4</b>	<b>VACUUM MEASURING GAUGES</b>	
4.a	Stabilized Analog pirani gauge with two pirani gauge heads needs to be provided to independently monitor the roughing (Chamber) and backing pressure. Vacuum in the	

	Job or pipe line needs to be seen on the gauge display using a selector switch. This Pirani gauge should measure vacuum level from 0.5mbar to 0.001m.bar.	
4.b	Stabilized Penning gauge with one gauge head is provided to monitor high vacuum on a separate Penning meter in two ranges, from $1 \times 10^{-3}$ to $1 \times 10^{-5}$ & from $2 \times 10^{-5}$ to $1 \times 10^{-6}$ m.bar	
<b>5</b>	<b>HIGH VACUUM CHAMBER FOR COATING</b>	
5.a	High Vacuum Chamber(Metal Bell Jar) is a cylindrical construction fabricated out of non-magnetic stainless steel SS-304 having dimension of dia meter 300mm x 400mm height.	
5.b	Water cooling and view port window for clear observation of the process inside the Bell jar and provided with L-gasket to achieve vacuum sealing of the chamber flange.	
<b>6</b>	<b>Manual Chamber lifting</b>	
<b>7</b>	<b>BASE PLATE &amp; GADGETRY</b>	
7.a	A base plate of 13" diameter made out of ss 304 material, finely ground & electrochemically polished to achieve a fine surface is needed. Chamber gadgetry made of stainless steel, conducting parts made out of electrolytic copper & insulating parts made out of Teflon.	
<b>8</b>	<b>LT Evaporation Feed Through (Filament holder)</b>	
8.a	Two Set of LT evaporation electrical feed through are needed	
8.b	Made out of electrolytic pure copper having 200Amps current carrying capacity	
<b>9</b>	<b>Evaporation Source Holder</b>	
9.a	One set for central evaporation. These can accept Filament/basket/Boat Evaporation Sources.	
<b>10</b>	<b>Supporting Frame</b>	
10.a	Three stainless steel pillars fitted to the base plate to support the SS works holder ring on which aluminum spherical or flat work holder is placed.	
10.b	A stainless steel mesh filter covering the pumping port to protect the diffusion pump from entry of un-wanted particles is needed.	
10.c	A dummy plate made ut of SS is mounted above the mesh filter & fixed to the base plate using three pillars is needed.	
10.d	All the chamber gadgetry (except those used for electrical conduction, insulation, flat & spherical work holder) offered in this system is made out of AISI-304 stainless steel & work holder are made out of aluminum.	
<b>11</b>	<b>Electrical</b>	
11.a	The unit is wired & supplied for the operation on 220V AC, 50Hz. Single Phase Power supply.	
11.b	LT Power supply	A transformer capable of delivering 200Amps at 10 volts, intermittent & 100Amps at 20Volts should be in corporate in the system.
11.c	LT Control	An Thyristor drive with Potentiometer to vary the voltage & current
11.d	Meters	Separate meters for LT current readout.

		Meter should read primary current and secondary current through current transformer	
11.e	Indicator Lamps	Glow lamps to indicate ON/OFF status of Rotary Pump, Diffusion Pump, LT and other accessories	
11.f	Power Connection	2 meters long 15 amps 3 core wire chord with plug	
<b>12</b>	<b>Mounting</b>		
12.a	Housed in a frame made up of MS material. Frame to be powdered coated for dust-free operation.		
12.b	Anitvibration mounts for rotary vacuum pump		
12.c	Vibration damping flexible corrugated bellow (SS304) of convenient length		
<b>3</b>	<b>Ultimate Vacuum</b>		
13.a	Vacuum range of $10^{-6}$ m.bar, when the chamber degassed & diffusion pump is supplied with water at 15-20 deg. C, 24 PSI Pressure & Flow rate of 1-2 lit/min.		
14	<b>Training and Installation will be given at College site</b>		

**(S.No.1B) Digital Thickness Monitor**

	<b>Digital Thickness Monitor</b>		
	Rate Display	3 Digit LED Auto Ranging from 0.00 to 999 kilo-Angstrom/sec	
	Thickness Display	4 digit LED display	
	Crystal Frequency	6 MHz	
	Film density	0.800 to 99.99 gm/cubic cm	
	Size	220 mm widths x 230 mm depth x 93 mm height	
	<b>Substrate Heater</b>		
	Temperature	450 degree C	
	Temperature Controller		
	Thermocouple		
	Heater Power Supply		
	Training and Installation at college site		

Physics Lab Equipments S.No2

<b>S.No.</b>	<b>Name of Equipments</b>	<b>Quantity</b>
1	The study of transistor characteristics	01
2	The study of regulated power supply	01
3	The study of RTL ,DTL,TTL gates	01
4	The study of half and full wave bridge rectifier	01
5	The study of FET characteristics	01
6	The study of energy band gap	01
7	The study of as inverting non inverting amplifier	01
8	The study of op amp active filter	01
9	The study of four probe method	01
10	The study of half and full adder	
11	The study of SCR characteristics	01
12	The study of pulse amplitude modulation and demodulation	01
13	The study of series and parallel resonance in LCR circuit	01
14	The study of R-S flop	01
15	The study of H- parameters of transistor	01
16	The study of micro vibrators	01
17	The study of MOSFET characteristics	01

18	The Study of Low pass and high pass filter	01
19	The Study of logics Traning board	01
20	The study of network theorem	01
21	The Thermistor as a Transducer	01
22	Characteristics of LED	01
23	Thevnin's network theorem	01
24	Norton's network theorem	01
25	The charging and discharging of a capacitor through a resistor	01
26	The Voltage Regulation by zener diode	01
27	The Transistor Bias Stability by Biasing Method	01
28	The magnetic field by Hall Probe Method	01
29	To study the Characteristics of TRIAC .	01
30	TO study the characteristics of DIAC	01
31	To study of Hall Effect	01
32	Lecher,s wire Dielectric constant	01
1	Y by bending of beam	01
2	$\Pi$ statical method	01
3	Dynamical method	01
4	Kater's pendulum	01
5	Moment of inertia of flywheel	01
6	Viscosity of water	01
7	Bar pendulum	01
8	Frequency of ac main	01

9	Melde's experiment	01
10	Calibrate of ammeter	01
11	Internal resistance of leclanche cell by means of potentiometer	01
12	Conversion of a galvanometer into ammeter	01
13	Post office box	01
14	Thomson's method	01
15	Post office box	01
16	Impedance l-c-r	01
17	Dispersive power of the material of the prism by the spectrometer	01
18	Wavelength of sodium light by diffraction grating spectrometer	01
19	Newton's ring experiment	01
20	To find the equivalent focal length of a lens system by nodal slide assembly	01
21	Newton's formula	01
22	Conductivity by lees method	01
23	Conductivity of a rubber tube	01
24	Characteristics of junction diode	01
25	Maxwell Bridge	01
26	Schering Bridge	01
27	Wien Bridge	01
28	Em by Thomson method	01
29	R-c coupled amplifier	01
30	L-c coupled amplifier	01
31	T-c coupled amplifier	01

32	Negative feedback amp	01
33	Characteristics of zener diode	01
34	H parameters	01
35	Transformer characteristics	01
36	Study of multimeter (analog)	01
37	And, or, not, gates	01

### **(S.No.2)Technical specification Of Physics lab equipments**

#### **The Study of Transistor Characteristics**

The Instrument Is Designed To Draw Input As Well As Output Characteristic Curve Of a P.N.P. Transistor AC 128. It Has Two Regulated Power Supplies Of Its Own & Four Meters . Complete Circuit Diagram Is Provided On The Front Panel. Complete With Instruction Manual.

Input : 230Volts AC

Output : 0-9 Volts At 50m A

Stability :  $\pm .05$

#### **2.The Study of Regulated Power Supply**

Input : 230Volts AC

Output : 0-15Volts At 2Amps

Load Regulation :  $\pm .02$  %

Line Regulation :  $\pm .05$  %

Ripple : Less Than 1 Mv R.M.S.

Protection : Protection Against Short Circuit.

Meters : Two Analog Meters Are Provided To Read Volts And Amps.

Current : 2Amp

### **3.The Study of RTL,DTL,TTL, gates.**

To verify the truth table for AND, NAND, OR, NOR, NOT, Ex-Or, Ex-NOR. Instrument comprises of 5V Power supply for logic '1' & Logic '0'. TTL IC is used for Gate & circuit diagram printed on the front panel & connection brought out at sockets. Output on 7 Segment display

### **4.The Study of half and full wave bridge rectifier**

To study Efficiency & Ripple factor in case of Half wave, Full wave & Bridge rectifier on application of load & filters.

Features :

Power Supply : AC 9-0-9 V

Voltmeter : 0-20 Volt

Ammeter : 0-100mA

Load : 6 Resistances

Size : 12X8X4

### **5.The Study of FET Characteristics**

Objective : To plot static & Transfer Characteristics.

Features : Instrument comprises of Two DC Regulated Power Supplies 0-15VDC/ 150mA & 0-5VDC/150mA, three round meters for voltage & current measurement, FET BFW10 mounted behind the panel, connections of Supplies, Meters & FET brought out at 4mm Sockets.

### **6.The Study of Energy band gap**

To plot reverse saturation current Vs temperature in reverse biased PN Junction diode. Instrument consist of dc regulated power supply 0-IV DC/500 $\mu$ A ,two round meters for Voltage and current measurement ,one PN Junction diode is in oven, 100°C Thermometer Provided with temperature control system. Dimension 10"x8"x3".

### **7.The Study of as inverting non inverting amplifier**



Features : Instrument comprises of DC Regulated Power Supplies of 0-1.5 VDC/150 mA,  $\pm 15V$  DC & two meters to measure input & output voltage, circuit diagram is printed. Dimension 10"×8"×4"

### **8.The Study of op amp active filter**

### **9 The Study of Four Probe method**

Four Probe Method at different temperatures and determination of the band-gap The Four Probe Method is one of the standard and most widely used method for the measurement of resistivity. In its useful form, the four probes are collinear.

Description of the experimental set-up:

1. Probes Arrangement, FPA-03: It has four individually spring loaded probes. The probes are collinear and equally spaced. The probes are mounted in a teflon bush, which ensure a good electrical insulation between the probes.
2. Sample: Germanium crystal in the form of a chip.
3. Oven : This is high quality temperature controlled oven suitable for Four Probe Set-up. The oven has been designed for fast heating and cooling rates, which enhances the effectiveness of the controller.
4. Four Probe Set-Up The set-up consists of three units housed in the same cabinet.
  - (i) Oven Controller
  - (ii) Multi range Digital Voltmeter
  - (iii) Constant Current GeneratorThe experimental set-up is complete in all respect.

### **10 The Study of half and full adder**

Objective: Half & Full Digital Adders has been designed to verify the truth table for Digital Half Adder & Full Adder.

Features: Fixed output DC regulated Power supply of 5V. Two 'EX-OR' Gates, IC no.7486 are mounted inside the cabinet & connections brought out on sockets. Two 'AND' Gates, IC no.7408 are mounted inside the cabinet & connections brought out on sockets. One 'OR' Gate, IC no.7432 is mounted inside the cabinet & connections brought out on sockets. Three Logic inputs, logic "0" &

logic "1" selectable using SPDT switches. Two output

### **11 The Study of SCR Characteristics**

Complete With Three Meters To Read Anode Current , Anode Voltage And Gate Current. Two Built In Regulated Power Supplies Are Provided.

### **12 The Study of Pulse Amplitude Modulation and demodulation**

AF Signal generator 1 KHz

Carrier generator 8 & 16\* KHz

PAM modulator

PAM demodulator

Power Supply  $\pm 12$  V/ 500 mA

### **13 The Study of series and Parallel resonance in LCR Circuit**

### **14 The Study of R-S flop**

### **15 The Study of H-Parameter of transistor**

### **16 The Study of Multivibrators**

555 Timer as A stable Multivibrator Apparatus has been designed to study the Wave Shape and Frequency produced by Astable Multivibrator.

The instrument comprises of the following built in parts:-

- 1) IC 555 placed inside the cabinet & connections brought out at sockets.
- 2) DC regulated power supply of 5V.
- 3) Various resistances & capacitors connected inside the cabinet & connections brought out at the sockets.

### **17 The Study of mosfet characteristics**

The Instrument Is Designed To Draw The Characteristic Of A MOSFET. Complete Circuit Diagram Is Engraved On The Front Panel. Three Meters Are Provided With Power Supply Of Its Own.

### **18 The Study of Low pass and high pass filter**

### **19 The Study of logics Training board**

### **20 The Study of Network Theorems (Superposition, Maximum Power, Norton's Thevenin's)**

To verify Superposition, Norton's Thevenin & Maximum Power Transfer Theorems. Instrument comprises of one Output DC Power supplies of 10V & mA current, 2 Analog meters, circuit diagram for all the theorems printed on the front panel and connections of supplies, meters, Resistances and potentiometers brought on sockets.

### **21 The Thermistor as a Transducer**

### **22 Characteristics of LED**

To study V-I Characteristics of a LED. Instrument consists of DC Regulated power supply with two meters for voltage & current measurement, LED mounted on panel, connections of supplies & LED brought on terminals. dimension 10×8×4.

### **23 Thevenin's network theorem**

Instrument comprises of one fixed output DC Power supply of 1 Current, 2 analog meter, circuit diagram printed on front panel and connections of supplies, meters and Resistances brought out at sockets.

### **24 Norton's network theorem**

**Objective:** Verify the different of theorems-

Superposition Theorems.

Thevenin's Theorems.

Norton Theorems

Maximum Power Transfer Theorems.

Technical Specifications : Inbuilt fixed DC regulated power supplies :

Output Voltage : 12VDC, 5VDC

On Board Analog Moving Coil Meters

Voltmeters : 0-3V & 0-15V

Ammeter : 0-15mA & 0-250mA (Dual Range )

Components Provided Resistances

Circuit diagram printed on Front Panel & all important test Points are brought out on front panel

Power requirement : 230 VAC 10%, 50Hz.

Weight : 2.5 Kg Approx.

Standard Accessories : Patch chords & Instruction manual.

### **25 The charging and discharging of a capacitor through a Resistor**

Objective : To study RC Time constant using various sets of Resistance & Capacitors.

Features : comprises of DC Power Supply with selector patchboards to select different voltages. Two meters to measure voltage & current, circuit diagram is Printed.

### **26 The Voltage Regulation by zener diode**

Objective : To study RC Time constant using various sets of Resistance & Capacitors.

Features : comprises of DC Power Supply with selector patchboards to select different voltages. Two meters to measure voltage & current, circuit diagram is Printed.

Objective :

Voltage Stabilization applications of a Zener Diode.

Technical Specifications :

Inbuilt Variable DC Regulated Power Supply

Output voltages : 0-30VDC

On Board Analog Moving Coil Meters (60 mm x 35 mm )

Voltmeter : 0-10VDC, 0-30VDC

Resistance & Diode provided

Zener Diodes : 5.1V & 8.2V

Load Resistances : Selectable through Band Switch

Symbol diagram printed on backlight Front Panel & all important test Points Are brought out on

front panel

Power requirement : 230 VAC 10%, 50Hz.

Weight : 1.5Kg Approx.

Dimensions : 10"X8"X4

Standard Accessories :

Power chord, Patch chords & Instruction manual.

Voltage Stabilization Characteristics of Zener diode with Bakelite Panel & Round Meters

### **27 The Transistor Bias Stability by Biasing Method**

Objective : To study of different Biasing Circuit for Transistor such as Fixed Bias Method, Collector to Base Bias, Emitter Resistor Bias and Voltage Divider Bias methods. Features : Instrument comprises of DC Regulated Power Supply, One NPN transistor, 2 round meters to measure the voltage and current, Different type of Resistances connected inside.

### **28. The magnetic field by Hall Probe Method**

### **29. To study the Characteristics of TRIAC .**

The Instrument Is Designed To Draw The Characteristic Of A Triac. It Is Provided With 0-300volts Ad 0-20 Volts Power Supplies IC Regulated. Provided With Three Meters.

### **30. TO study the characteristics of DIAC**

The Instrument Is Designed To Draw The Characteristic Of A Diac. It Is Provided With 0-30 Volts IC Regulated Power Supply & 2 Meters.

### **31. To study of Hall Effect**

The resistivity measurements of semiconductors can not reveal whether one or two types of carriers are present; nor distinguish between them. However, this information can be obtained from Hall Coefficient measurements, which are also basic tools for the determination of carrier density and mobilities in conjunctions with resistivity measurement.

Hall Effect experiment consists of the following:

- 1) . Hall Probe (Ge. Crystal Mounted on a PCB).
- 2) . Electromagnet 10,000 Gauss.

- 3) . Power Supply for Electromagnet.
- 4) . Constant Current Power supply with Two Digital Meters. Digital Milli Voltmeter 0-200mV sensitivity  $\pm 0.1$  mV. Auto polarity. Digital milli Ampere-meter 0-20mA , sensitivity  $\pm 0.01$ mA.
- 5) . Digital Gauss meter with Hall Probe, 20KG .

## **32. Lecher,s wire Dielectric constant**

### **1. Y by bending of beam**

Object:

To determine the Young's modulus of the material of a given beam supported on two knife edges and loaded at the middle point.

Young's modulus is named after Thomas Young,19th century ,British scientist. In solid mechanics, Young's modulus is defines as the ratio of the longitudinal stress over longitudinal strain, in the range of elasticity the Hook's law holds (stress is directly proportional to strain). It is a measure of stiffness of elastic material.

If a wire of length  $L$  and area of cross-section ' $a$ ' be stretched by a force  $F$  and if a change (increase) of length ' $l$ ' is produced, then

### **2. $\Pi$ statical method**

OBJECT:

To determine the Young's modulus of the material of a given beam supported on two knife edges and loaded at the middle point.

The experimental rod is held horizontal and firmly fixed at one end on a suitable frame. The large vertical pulley mounted at other end of the rod. A light string wound round the groove of the pulley carries a weight hanger.

A small mirror is fixed at a convenient point on the rod at a distance of about 40cm from one end. The length  $l$  of the rod from the clamped end to the mirror is measured. A telescope and scale arrangement is set up at a distance of about 1m from the mirror. The telescope is turned towards the mirror and it is focused at the reflected image of the scale in the mirror. The scale is so adjusted that the reading of the scale in the telescope is near the centre graduation scale.

The string is wound once around the pulley in the clockwise direction. The slotted weights are placed on the weight hanger one by one and are removed one by one so as to deform the rod

elastically. Starting with the weight of the empty weight hanger, the reading of the scale division coinciding with the horizontal cross wires of the telescope is taken, and again as each weight is added. The weights are removed one by one and the corresponding readings are again taken. The shift in the telescope reading due to the addition of a load is determined. The experiment is repeated by winding the string in the anti-clockwise direction around the groove of the pulley.

Hence is calculated.

### **3. Dynamical method**

#### **Dynamic mode**

If the spring is made to oscillate by pulling the weight applied to it downward, it executes a simple harmonic

motion; the equation representing its motion is written as  $x = A \sin(\omega t + \phi)$ . The angular velocity is given by:

#### **4. Kater's pendulum**

Kater's pendulum is a compound pendulum based on the principle that the center of suspension and center of oscillation are interchangeable. The movable cylinders, knife edges and the metallic weight are so adjusted such that the time periods of the pendulum about the two knife edges situated asymmetrically with respect to the center of gravity are exactly equal. Then, the distance between the knife edges is equal to the length of equivalent simple pendulum whose time period is given by (refer to Equation (5), Bar pendulum)

#### **5. Moment of inertia of flywheel**

To study the angular motion of flywheel and to determine its moment of inertia.

A flywheel is a disc with a horizontal axle passing through its center of mass. The two ends of the axle are mounted with bearings. This arrangement is kept at a distance  $H$  from the ground level. A string of length just equal to the height  $H$  is taken. The string is wound tightly and uniformly on the axle of the flywheel by hooking its one end to a vertical pin fixed to the axle of the flywheel. A mass  $m$  is attached to the other end of the string. If the mass is allowed to fall, it unwinds the string and sets the flywheel into rotational motion. When the string unwinds completely, it detaches from the axle and the mass falls to the ground. The flywheel continues to rotate a few more turns due to its rotational inertia and comes to rest after some time due to its frictional force.

#### **6. Viscosity of water**

#### **7. Bar pendulum**

## **8. Frequency of ac main**

Object: To find the frequency of A.C mains by using sonometer

Formula Used:

The frequency of A.C mains is given by the following formula

$$n = \frac{1}{2l} \sqrt{\frac{T}{m}}$$

Where  $l$  = length of the sonometer wire between the two bridges when it is thrown into resonant vibrations.

$T$  = tension applied to the wire.  $m$  = mass per unit length of the wire.

Apparatus Required:

Sonometer withy non-magnetic wire (brass wire) stretched over it, step-down transformer of 6-8 volts, horse shoe magnet, meter scale, screw gauge and half kg weights.

## **9. Melde's experiment**

To determine the frequency of an electrically maintained tuning fork by Melde's experiment and to verify  $\lambda^2$ - $T$  law.

1. Transverse mode of vibration
2. Longitudinal mode of vibration

Speed of waves in a stretched string: A string means a wire or a fiber which has a uniform diameter and is perfectly flexible. The speed of a wave in a flexible stretched string depends upon the tension in the string and mass per unit length of the string.

APPARATUS:

Electrically maintained tuning fork, A stand with clamp and pulley, A light weight pan, A weight box, Analytical Balance, A battery with eliminator and connecting wires etc.

## **10. Calibrate of ammeter**

## **11. Internal resistance of leclanche cell by means of potentiometer**

**Object:** To determine the internal resistance of Leclanche cell using potentiometer.

Formula Used:

The following formula is used for the determination internal resistance of Leclanche cell .

$l_1$ =balancing length of potentiometer wire when Leclanche cell is open circuited with resistance box.

$l_2$ =balancing length of potentiometer wire when Leclanche cell is closed circuited with resistance box.



R=Resistance applied in resistance box when Leclanche cell is closed circuited.

### **Apparatus Used**

Potentiometer, Battery eliminator, Two one way keys, Rheostat of low resistance, Galvanometer, Two resistance boxes. Leclanche cell, Jockey, Ammeter, Connecting wires

### **12. Conversion of a galvanometer into an ammeter**

Instrument comprises of DC Regulated power supply 0-10V DC /500mA , Three round meters 1Galvanometer and 1voltmeter & 1Ammeter three set of resistance and shunts on panel, connections of supplies ,Dimension 15"X8"X4".

### **13. Post office box**

### **14. Thomson's method**

Specifications:

The apparatus is designed to work on 230 volts AC 50c/s. It has built in E.H.T. supply. New Cathode Ray tube is used to provide proper display. Very easy to handle and Compact in size.

Input : 230 Volts 50C/s

E.H.T : 800 Volts at 10mA

Deflection Volts : 0-50volts at 15mA

L.T : 6.3 volts at 2A

Horizontal Deflection : By Bar Magnets

Vertical Deflection : By internal built in supply

Provided with wooden stand, Deflection Magnetometer & pair of bar

### **15. Post office box**

### **16. Impedance I-c-r**

### **17. Dispersive power of the material of the prism by the spectrometer.**

Exp-1 To determine the Dispersive Power of the material of the prism for violet and yellow colours of Mercury light with the help of a Spectrometer.

Exp-2 To determine the dispersive power of prism.

Exp-3 To measure the dispersive power of a prism using spectrometer.

The dispersive Power of the material of the prism is given by the formula

Where,  $\mu_v$  = refractive index of the material of the prism for violet colour

=refractive index of the material of the prism for red colour,

The refractive index of the prism is given by

Where,  $A$  = Angle of the prism,  $\delta$  = Angle of minimum deviation

### **Advanced Spectrometer ( 7" Brass Scale)**

Least count : 30 seconds

Objective : Achromatic lens,  $f = 178\text{mm}$ ,

Aperture : 32mm

Eyepiece : 15X, Ramsden eyepiece

Slit : Silver with knurled screw

Reticle :  $90^\circ$  cross etched on glass

Scale : Brass, Dia. 175mm.

Vernier : 2 verniers (Telescope)

Prism table

Grating holder

Base : The sturdy base with heavy casting along with two level screws gives the instrument stability and horizontal leveling.

Supplied in wooden box.

### **Mercury light source:-**

Complete with housing for Mercury lamp

Lamp House : Wooden (13"x7"x7")

Input Voltage : 220V, 50Hz

Aperture dia. : 25mm (Adjustable aperture)

Prism:-

Size : 38x38x38mm

Height : 38mm

Material : EDF

### **Contents:**

Spectrometer standard 1

Mercury light source 1

Prism 1

Reading lens 1

Sprit Level 1

instruction manual 1

### **18. Wavelength of sodium light by diffraction grating using spectrometer**

Exp-1 Measurement of the wavelength separation of sodium D-lines using a diffraction grating and to calculate the angular dispersive power of the grating.

The wavelength  $\lambda$  of a source of line can be found by using the equation  $d \sin \theta = n \lambda$  if the angular position  $\theta$  of one principal maxima produced by a grating of slit known separation  $d$  (usually supplied by the manufacturer) is known. The grating is used in conjunction with a spectrometer so that  $\theta$  may be measured to a very high degree of accuracy.

#### **Sodium Light Source:-**

Complete with housing for sodium vapor lamp

Transformer

Input Voltage : 220V, 50Hz

Starting Voltage : 470 Volts

Sodium Bulb : 35 Watt

Lamp House : Wooden

Aperture dia. : 25mm (Adjustable aperture)

#### **Advanced Spectrometer ( 7" S.S. Scale)**

Least count : 30 seconds

Objective : Achromatic lens,  $f = 178 \text{ mm}$ ,

Aperture 32mm

Eyepiece : 15X, Ramsden eyepiece

Slit : Silver with knurled screw

Reticle :  $90^\circ$  cross etched on glass

Scale : S.S. Scale, Dia. 175mm.

Vernier : 2 verniers (Telescope)

Prism table

Grating holder

Base : The sturdy base with heavy casting along with two level screws

gives the instrument stability and horizontal leveling.

Supplied in wooden box.

**Diffraction Grating:-**

Size : 38x50mm

Line/Inch : Hilger & Watts Type, 15000 line per inch/6000 lines per cm

**Contents:**

Advanced Spectrometer 1

Sodium light source 1

Diffraction grating 1

Reading lens 1

Sprit Level 1

instruction manual 1

**19. Newton's ring experiment**

Exp-1 To determine the wavelength of sodium light.

Exp-2 To determine the refractive index of a liquid by using Newton's rings apparatus.

Exp-3 To find the radius of curvature of planoconvex lens using Newton's rings experiment, given  $\lambda=5893\text{\AA}$

Exp-4 To find the thickness of a thin sheet of paper (air wedge experiment).

In this apparatus, light from a sodium lamp falls on the glass plate, inclined at 45 degree to the horizontal, get reflected, and then falls normally on the convex lens placed over the glass plate. A system of Bright and dark concentric circular rings are observed through a microscope, arranged vertically above the glass plate. The microscope is properly focused so that alternate bright and dark concentric circular rings are observed more clearly. Measurements are taken from a micrometer driven traveling microscope, which is integrated with this apparatus.

The two interfering beams, derived from a monochromatic source satisfy the coherence condition for interference. Ring shaped fringes are produced by the air film existing between the convex surface of a long focus plan convex lens and the plane of glass plate.

**Bridge Type Microscope**

Eyepiece : Ramsden 10x.

Scale Length : 110 mmt

Objective : 3x

Least count : 0.01 mm

Sodium Light Source:-

**Complete with housing for sodium vapor lamp**

Transformer

Input Voltage : 220V, 50Hz

Starting Voltage : 470 Volts

Sodium Bulb : 35 Watt

Lamp House : Wooden

Aperture dia. : 25mm (Adjustable aperture)

**Spherometer (Disc Brass)**

Type : 3 legs

Verticale Scale : 6mmx6mm (WxT)

Micrometer : Dia. 40mm, Brass

Lower Disc : dia. 60mm

Range : 10-0-10mm

Least Count : 0.01mm

**Newton's Rings Reflector**

Housing : PVC

Finish : Matt black painted

Glass Plate : Mounted at 45°

Plano Convex Lens

Dia. : 61.5mm, Glass

Focal Length : 200mm

**Contents:**

Newton's ring apparatus 1

Sodium Light Source 1

Spherometer 1

Plano convex lens with plane glass plate 1

instruction manual 1

**20. To find the equivalent focal length of a lens system by nodal slide assembly**

**21. Newton's formula**

**22. Conductivity by lee's method**

**23. Conductivity of a rubber tube**

**24. Characteristics of junction diode**

**25. Maxwell Bridge**

**26. Schering Bridge**

**27. Wien Bridge**

**28. E m by Thomson method**

E/M By Thomson Method (Bar Magnet Method)

Specifications:

The apparatus is designed to work on 230 volts AC 50c/s. It has built in E.H.T. supply. New Cathode Ray tube is used to provide proper display. Very easy to handle and Compact in size.

Input : 230 Volts 50C/s

E.H.T : 800 Volts at 10mA

Deflection Volts : 0-50volts at 15mA

L.T : 6.3 volts at 2A

Horizontal Deflection : By Bar Magnets

Vertical Deflection : By internal built in supply

Provided with wooden stand, Deflection Magnetometer & pair of bar

**29. R-C coupled amplifier**

**30. L-C coupled amplifier**

**31. T-C coupled amplifier**

**32. Negative feedback amp**

**33. Characteristics of zener diode**

**28. H parameters**

**35. Transformer characteristics**

**29. Study of multimeter (analog)**

**37. And, or, not, gates**

**Important note:** The number of Physics lab equipments described above may be either increased or decreased /changed/upgrade etc. as per the decision of technical /purchasing committee.

**(S.No.3A) Technical Specification for Trinocular Microscope**

**Trinocular Microscope Model CX21i**-Trinocular microscope - Standard complete microscope set with Siedentop Trinocular head, integrated 6V 20W halogen light illuminator/LED illumination (offer for both type) Anti-Fungal coated Plan Achromatic Objectives 4x,10x,40x spring 100x oil, spring, paired wide field eyepieces 10x F.N.20, manufactured under license from Olympus Corporation, Japan'

**Features;** UIS2 Infinity Plan Optics for excellent image flatness, Siedentop for Trinocular head for IPD adjustment, Anti-fungus treatment for tropical durability, High point paired eyepieces F.N.20, Abbe condenser with high performance aspheric lenses for bright uniform illumination throughout the field of view, Window in arm for convenient carrying Ergonomic design for user convenience, SMPS power supply for flicker free illumination , Rackless specimen stage for user safety and comfort, specimen stage focus-lock prevents any accidental damage to objectives.

**(S.No. 3B) CMOS Camera MAGCAM DC5 with adapter**

5 MP (Megcam DC-5 )adapter for image viewing and video recording, Resolution 1360×1024 magvision software from same company.

**Note:** Installation of Trinocular Microscope with software & camera with Demo will be offered at free of cost in College premises.



**Format for Technical compliance sheet (Annexure IB)**

<b><u>S.No.</u></b>	<b><u>Name of equipment</u></b>	<b><u>Specification by College</u></b>	<b><u>Specification offered by vender with supporting brochure and catalogs</u></b>

**Important Notes**

1-The technical compliance bid must be in this sheet only for equipments offered by you otherwise is should be assumed that bidder is not able to offer technically desired product. Information provided elsewhere or in different form will not be considered. Supporting brochures and documents should be attached.

2. The bidder shall assume full responsibility of the information provided in this sheet. Any false statement should render the breach of basic foundation of the tender.

3. Installation and training to be offered at free of cost in College.

**Signature of bidder with seal**

**<<<<(To be given on Company letter head)>>>>>> – (Annexure II)  
TENDER ACCEPTANCE LETTER**

Date:

To,

Principal  
S.S.V. P.G. College, Hapur

Sub: Acceptance of terms and Conditions of tender.

Tender Reference No:

Name of the tender/work:-

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Dear sir,

1. I/we .....have downloaded the tender documents for the above mentioned Tender/work from the website (s) namely:

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as per your advertisement, given in the above mentioned website(s).

2. I/we hereby certify that I/we have read the entire terms and conditions of the tender documents from Page No. \_\_\_\_\_ to \_\_\_\_\_ (including all documents like annexure(s), schedules(s), etc.,) which form part of the contract agreement and I/we shall abide hereby the terms/ conditions/clauses contained therein.

3. The corrigendum(s) issued from time to time by your department / organization too have also been taken into consideration, while submitting this acceptance letter.

4. I/we hereby unconditionally accept the tender conditions of above mentioned tender document (s)/corrigendum(s) in its totality /entirety.

5. I/we do hereby declare that our Firm has not been blacklisted/ debarred by any Govt. Department/Public Sector Undertaking.

6. I/we certify that all information furnished by our Firm is true and correct and in the event the information is found to be incorrect/untrue or found violated, then your department/organization shall without giving any notice or reason thereof or summarily reject the bid or terminate the contract, without prejudice to any other rights or remedy including the forfeiture of the full said earnest money deposit absolutely.

Yours faithfully,

**Signature of the Bidder,  
with Official Seal**

<<<< letter head of the manufacturer>>>>

**MANUFACTURERS' AUTHORIZATION FORM – (Annexure III)**

**No:**

**Dated:** \_\_\_\_\_

**The Principal ,  
S.S.V.College  
Hapur**

We \_\_\_\_\_ who are established and reputed manufacturers of the equipment having factories at \_\_\_\_\_ (address of factory) do hereby authorize M/s. (Name and address of Agent) to submit a bid, negotiate and receive the order from you against your Tender No. \_\_\_\_\_ dated \_\_\_\_\_.

No company or firm or individual other than M/s. \_\_\_\_\_ is authorized to bid, and conclude the contract in regard to this business.

We hereby extend our full guarantee and warranty as per the Terms and Conditions of the above Tender for the goods and services offered by the above firm.

**Yours faithfully,**

**(Name)**

**(Name of manufacturers)**

This letter of authority should be on the **letterhead of the manufacturer** and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be enclosed by the Bidder in its bid.

<<<On the letter head of the Firm>>>

**BIDDER INFORMATION FORM (Annexure IV)**

**Company Name:** \_\_\_\_\_

**Registration Number:** \_\_\_\_\_

**Registration Address:** \_\_\_\_\_

\_\_\_\_\_

**Name of Partners/Director:** \_\_\_\_\_

**City:** \_\_\_\_\_

**Postal Code:** \_\_\_\_\_

**Company Establishment Years Name:** \_\_\_\_\_

**Company's Nature of Business Name:** \_\_\_\_\_

**Company's Legal Status:(Please tick)** 1.Limited Company 2. Undertaking 3. Joint Venture 4. Partnership 5. Others

**Company Category: (Please tick)** 1.Micro Unit as per MSME 2.Small Unit as per MSME 3. Medium Unit as per MSME 4. Ancillary unit 5.SSI unit 6.Others

**Whether you are :** Manufacturer of the goods quoted; or Manufacturers authorized agent for those goods. (Attach Copy from OEM)

**Contact Details:**

**Contact Name:** \_\_\_\_\_

**Email ID:** \_\_\_\_\_

**Designation:** \_\_\_\_\_

**Phone NO.:** \_\_\_\_\_

**Mobile Number:** \_\_\_\_\_

**Bank Details:**

**Beneficiary Name:** \_\_\_\_\_

**Account No. and Type :** \_\_\_\_\_

**Name of Bank:** \_\_\_\_\_

**IFSC Bank:** \_\_\_\_\_

**Branch Address and code:** \_\_\_\_\_

**Other Details:**

**Vendor's PAN No.** \_\_\_\_\_

**Vendor's GST No.** \_\_\_\_\_

Signature of Bidder with Seal

<<<On the letter head of the Firm>>>>

**CERTIFICATE OF GUARANTEE/WARRANTY (Annexure V)**

I/We .....certify that the guarantee/warranty shall be for a period of ..... (as applicable) starting from the date of satisfactory installation, commissioning and handing over of the equipment and of the works conducted therewith covered under the Supply order in working order. During the guarantee/warranty period, I/we shall provide free —after sale service|| and the replacement of any part(s) of the equipment or rectification of defects of work of the equipment will be free of cost. The replacement of the parts shall be arranged by us, at our own cost and responsibility. We undertake that the above guarantee / warranty shall begin only from the date of satisfactory and faultless functioning of the equipment in college premises. The benefit of change in dates of the guarantee / warranty period shall be in the interest of the user/your organization.

During the warranty period, **we shall provide at least 4 preventive maintenance visits per year. and annual calibration as per requirement.**

Uptime Guarantee: During the guarantee/warranty period, we will be responsible to maintain the equipment in good working conditions for a period 347 days (i.e. 95% uptime) in a block of 365 days.

All complaints will be attended by us   within 5 working days of receipt of the complaint in our office.

In case there is delay of more than 2  days in attending to a complaint from our side then you can count the number of days in excess of the permissible response time in the downtime. The above said response time of 2 days for attending to a complaint by us will not be counted  in the downtime.

Penalty: We shall pay a penalty  equivalent to 0.50% of the FOB value of the equipment for every week or part  thereof delay in rectifying the defect.

**Note:** The right to accept the reason(s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of College.

We certify that the Equipment /Item being/ quoted is the latest model and that spares for the Equipment /Item will be available for a period of at least 10 years and we also guarantee that we will keep the organization informed of any update of the Equipment /Item over a period of \_\_\_ years even after warranty period.

We guarantee that in case we fail to carry out the maintenance within the stipulated period, University reserves the right to get the maintenance work carried out at our risk, cost and responsibility after informing us. All the expenses including excess payment for repairs/maintenance shall be adjusted against the Performance Bank Guarantee. In case the expenses exceed the amount

of Performance Bank Guarantee, the same shall be recoverable from us with/without interest in accordance with the circumstances.

We shall try to repair the equipment at College premises itself. However, the equipment will be taken to our site on our own expenses in case it is not possible to repair the same at College premises. We shall take the entire responsibility for the safe custody and transportation of the equipment taken out for repairs till the equipment is rehabilitated to the College after repair. Any loss of equipment or its accessories under its charge on account of theft, fire or any other reasons shall be at our sole risk and responsibility which will be compensated to College for such losses.

**Signature of Bidder**

Full name,

.

Name and address of bidding firm

**List of Govt. organization(Annexure VI)**

<b>List of Government Organizations for whom the Bidder has undertaken such work during last three years (must be supported with work orders)</b>		
<b>Name of the organization</b>	<b>Name of Contact Person</b>	<b>Contact No. and Email ID</b>

**Signature of Bidder**

**Name:** \_\_\_\_\_  
**Designation:** \_\_\_\_\_  
**Firm Name:** \_\_\_\_\_  
**Contact No. :** \_\_\_\_\_

<<<On the letter head of the Firm>>>>

**FORMAT FOR THE PRICE BID/FINANCIAL BID (ENVELOPE B)**

Equipment Name	Qty.	Unit prices	Academic Discount	GST %	Freight, Forwarding, Training etc. (If any) FOR ssv college Hapur	Packaging, installation, Charges (If any)	Warranty	Total in INR
1								
2								
3								
4								
Grand Total in INR F.O.R. S.S.V.P.G.College Hapur (In words and figures) 1+2+3+4+.....								

This is certified that the rates quoted above are not more than the rates charged from any other Institution/Department/Organization or quoted on Government e-Marketing (GeM) if above quoted items are available on GeM Portal.

Total bid price should be inclusive of all taxes and levies, transport, loading, unloading etc. in INR only

**Delivery Mode:** Delivery at S.S.V.P.G. College Hapur, at site only

**Delivery Time-** 2-3 weeks

**Installation Period:**..... .days/ weeks.

**Quotation Validity Date:** -Minimum 120 Days from the date of Submission of quotation/tender.

**Payment Term:** Payment 4-6 weeks working days from the date of submission of bill with acceptance certificate from the concerned dept.

Sign of bidder:\_\_\_\_\_

Date:

Name of the bidder:\_\_\_\_\_

Firm's Name and seal



<<<On the letter head of the Firm>>>>

**Check List (Attach at Top of Technical bid)**

**Name of firm**

**Date.....**

**Tender Ref. Number.....**

**Name of tender /work**

BIDDERS to indicate whether the following are enclosed/mentioned by striking out the non-relevant option

<b>Envelope-A (Technical-Bid)</b>				
S.No.	Documents Type	Contents	Documents attached Y/N	Page Number
1	<b>Technical Bid</b>	Tender Fees and EMD in the form of DD attached		
2		Scanned copy of Firms registration, PAN, GSTIN		
3		Technical compliance Sheet (annexure IB)		
4		Original copy of make, model of all system, subsystems, accessories should be mentioned in the technical bid and complete technical details should be provided in the form of brochures		
5		Tender Acceptance letter ( Annexure-II)		
6		In case of imported equipments copy of Manufacturers Authorization Certificate issued by Principal manufacturers duly verified by Indian agents or manufacturing certificates (Annexure - III)		
7		Details of firm offering quote with supporting documents(annexure- IV)		
8		Warranty of the equipment may also be mentioned (Annexure- V)		
9		List of organizations/ clients where the same products have been supplied (in last three years) along with their contact number(s). (Annexure-VI)		
10.			Whether each page of tender document signed with company seal	
<b>Envelope-B (Price/Financial -Bid)</b>				
S. No.	Documents Type	Contents	Documents attached Y/N	Page Number
	<b>Financial Bid</b>	<b>Price bid should be submitted as per format</b>		

**Signature of bidder with official seal**

---End of Tender Documents---