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Office of The Principal Jhargram Raj College, Govt. of West Bengal

P.O. & Dist.-Jhargram, Pin-721507

Memo No: 324/DBT-1

Date: 27.07.2020

NOTICE INVITING TENDER

Quotations are invited from the manufacturers, authorized distributers and or suppliers for small equipment for the **Department of Physics** under the DBT star College grant (San. No. 102/IFD/SAN/4679/2018-2019 dated 01.03.2019). The interested manufacturers, authorized distributers/suppliers/dealers may submit quotations in the prescribed proforma (Annexure I) to the office of the Principal, Jhargram Raj College, Jhargram latest by August 4, 2020. Quotation in any other format will not be entertain and will be rejected outrightly. The Principal, Jhargram Raj College reserves the right to select the items (in single or multiple units) or to reject any quotation without assigning any reason. Incomplete tenders, amendments and additions to tender after opening or late tenders are liable to be ignored and rejected. Interested venders may follow the instructions as given below for submission of their tenders through **speed post** only and no other mode of submission will be entertained due to COVID-19 pandemic situation. The envelope containing bid must clearly be **superscript the name of the Department and the memo number** of the tender notice. For details, please visit College website- www.jrc.ac.in.

Terms and Condition of Bid

- Only manufacturer(s) or their sole authorized distributors/ agents are eligible to bid. Authorization letter in the prescribed format (Annexure II) from original manufacturer in favour of authorized Agent to bid/conclude the order against this tender, must be enclosed with the technical bid.
- 2. All offers should be made in English and should be written in both figures and words. All offers should be quoted in INR currency and comprehensive maintenance for three years for all the equipment. The rates once accepted will remain valid for the period up to 31st March, 2021 and will not be changed under any circumstances.
- 3. No advance payment must not be claimed against any work order before the delivery of the items at a time to the Office of the Coordinator, DBT star College scheme, Jhargram Raj College.
- 4. No installation charge and post-sale service will be claimed at any circumstances.
- 5. The Rate should be quoted as per specification excluding of All Taxes. The L1 bidder will be selected based on the quoted price of the materials excluding taxes.
- 6. Any distortion in the technical specification indicated and also all terms & condition as indicated by the tender inviting authority for any of the items will reject the entire bid of the bidder.
- 7. The bidders must have successfully completed at least 3 similar orders in the central and the state government agency/institution. Copy of the purchase order must be attached with Technical Bid.
- 8. Signed & stamped compliance sheet of the technical specification with make and model of the equipment with technical printed literature along with Bill of Material (BoM) mentioning all the terms & conditions clearly, must be enclosed with the bid.
- **9.** Photocopy of the financial statements with net profit, duly audited/certified by the chartered accountant (CA) of the last three financial years along with the copies of income tax return (ITR), IGST certificate, PAN No., current trade license and a cancelled cheque must be enclosed with the bid (Annexure III).
- 10. The tenderer should not have been debarred or blacklisted by any Central/State Government Departments of India. Self-declaration in their letter head must be enclosed with the technical bid in prescribed format. The proforma of the self-declaration is attached with the tender as **Annexure –IV**.
- 11. The tender bid will be out rightly rejected if it comes to the notice of the tender inviting authority during scrutiny that the credential or any other paper of a tenderer is fabricated etc. and the tender inviting authority shall verify the above mentioned documents (In original) which are mandatory for the participation before issuance of the work order.
- 12. The tenderer viz. the Indian Agents and / or the foreign firms should furnish a certificate that the rates quoted by the tenderer are not more than those quoted to any other Institution in India or aboard during the last one year, with supporting documents.

- 13. In case of any dispute, the College's decision will be treated as the final and conclusive. All legal actions are subject to Kolkata jurisdiction only.
- 14. The delivery should be made to the office of the coordinator, DBT Star College within seven (07) days from date of issuance of work order (All the items at a time). The supplied items will be physically verified and compared with the detail specification of individual items by the coordinator during delivery.
- 15. The violation of any of the conditions will entitle cancellation of the order.
- 16. Payment of bills on its production will be made after successful supply of the items within stipulated time, after the successful installation of each and every individual.
- 17. Any postal delay will not be entertained and bids reach after 5.00 pm of the stipulated date (4th August) will not be accepted. Please post your bids well in advance to avoid postal delay.

Itemised Detail Specification with Make and Model

Sl. No.	Instruments	Make with Model No.	Year of post-sale service required (Year)
01.	To determine the Coupling Coefficient of a Piezoelectric crystal. The total set up is complete with the following – Function Generator. Calibrated resistance box. Calibrated capacitance box. Calibrated inductance box. Calibrated piezoelectric crystal in wooden box. Calibrated voltmeter Calibrated Ammeter. Manual.	OSAW	Three
02.	Babinet's Compensator The instrument consists of two-round scales. One with index and the other vernier. The first scale (index scale) is for tuning the analyser into the azimuth. The second scale (vernier scale) is for measuring the degree of orientation of a wedge box. The wedges box contains two wedges cut in mutually perpendicular direction of optics axis in quartz. The long wedge is movable by means of a micrometer drum, with the help of which accurate reading of the movement is taken. Micrometer screw minimum reading 0.001cm. (i.e. Least count)	Make – BESTO (Code – 1541) Or Make-Devco	Three
03.	Dual Trace 30MHz Oscilloscope (Analogue) Make – Scientific Technical specification Dual Channel, DC to 30 MHz, Invert facility in both ChannelsVertical Deflection coefficients 5 mV to 20 V/div. Time Base: 20 ns -0.2 s/ div; Variable Hold- Off; X10 Magnification Triggering: DC-60 MHz; Active TV Sync Sep.; Alternate triggering LED indication for stable triggering XY mode Z Modulation Saw tooth output (5 Vpp approx) Component Tester; 2 Level Calibrator	Scientific (Model No - SM-410)	Three
04.	Millikan's oil drop experiment The experiment aims at measuring the charge of an electron and is perhaps the most basic of all automatic physics laboratory experiment it won Millikan the noble prize in the year 1923 The present set up consists of A oil drop chamber mounted of the top of the panel It has 3 leaving screw at the base of the panel to make the parallel electrode plates horizontal using a water level .A microscope with CCD camera head to view and transmit image of oil droplet . 0-800 v continuously variable voltage power supply A digit volt meter to measure the potential applied to the upper plate A time meter to display the time of which the oil droplet its allow to move	SES Instruments (Model no: MOD-01)	Three

	A timing device to measure time interval between the passage of droplet		
	through per set point		
	A ty monitor a graduate screen, the horizontal lines on the screen help in		
	setting the distance through which the droplet move		
	An atomizer to space droplet		
	The measurement is made by measuring the time for free fall of the droplet		
	under gravity between the preset point thereby giving its velocity the result		
	of this unit are within 5% of the standard value		
05	To determine Voung's Modulus of a Wire by Ontical Laver Method	DEVCO	Three
05.	The total setup completes with the flowing	DEVCO	Intec
	Voung modulus wire by Onticel Lever method		
	Stand type with 250gm v5 slotted weight		
	Deading Telescone		
	highly improved apparetus mounted on a 1" dia Diller of 19" length fitted on		
	nighty improved apparatus mounted on a 1 dia. Philar of 18 length fitted on		
	a neavy cast from circular base with the services the talescene can be retated in a		
	special arrangement applied to the carriage, the telescope can be rotated in a		
	horizontal as well as in vertical plane. The telescope is fitted with achromatic		
	objective and is focused by rack and pinion arrangement. It has a focal range		
	from 3 feet to infinity. Complete with Perspex scale and holder. Both brass		
	tubes.		
06.	Measurement of the thermal conductivity of a bad conductor in the	DEVCO	Three
	shape of a disc by lee and Charlton's method –		
	The total set up is complete with the following –		
	Lee's & Charlton's Apparatus –		
	Heavy brass disc of 10 cms. Dia. And 1.5cms. thick is suspended from a		
	metal upright circular disc of experimental material is placed on this disc and		
	a steam chamber of same diameter as brass disc is placed on it three are holes		
	at brass disc and at the bottom of steam chamber for insertion of thermometer		
	complete with three disc of different badly conducting materials.		
	Vertical reading microscope		
	Vertical Reading Microscope: A vertical pillar is fitted on a heavy triangular		
	base fitted with three leveling screws. In the vertical pillar moves a 15 cms.		
	Long vertical scale. The horizontal microscope is fitted with a sensitive spirit		
	level. Microscope tube is fitted with achromatic objective and focusing by		
	rack and pinion arrangement.		
	Thermometer $- 1/10^{\text{th}} - 110^{\circ} \text{ C Alcohol}$ -		
	Boiler – copper made – 2 liter		
	Heating Mantle – 2liter		
	Rubber Tube – 8mm – Silicon		
	Slide Calipers – Brass Body		
	Analogue Stop Watch – DIAMOND		
	Screw Gauge –Brass		
07.	Digital Balances	Saffron, Made	Three
• • •	Unper range $= 320$ gm	in Indian.	
	Lower range $-0.001 \mathrm{gm}$	(Model –	
	Pan size – 120mm	SES-223)	
	Calibration – auto	515 110)	
	Display - Large Backlit LCD Display		
	Standard Features:		
	High contrast Large Backlit LCD Display for easy viewing with A F P		
	(Advanced Eve protection)		
	Based on EMEC Brilliant MONOLOG single block technolog		
	Strong anti-shaking software for the accurate result in normal vibration		
	surface		
	Standard RS 232 C interface LISB part appret to connect with DC / Drinter		
	standard K5 252 C interface USD port, casy to connect with PC / Printer		
1	Single touch key Fully Auto External calibration		
	Single touch key Fully Auto External calibration		
	Single touch key Fully Auto External calibration Overload protection design.		
	Single touch key Fully Auto External calibration Overload protection design. Mass unit conversion by toggling		
	Single touch key Fully Auto External calibration Overload protection design. Mass unit conversion by toggling Conforms GLP / GMP and ISO 9001Standard.		

	User selectable stability and filter level.		
	Easy operating system.		
	Below weighing system provided.		
	Auto Density determination facility		
	GSM weighing facility		
	High-grade chemical resistance body		
08	Zeeman effect experiment	SES	Three
00.	The Zeeman effect is the splitting of spectral lines of atoms when they are	Instruments	Three
	The Zeeman effect is the spitting of spectral lines of atoms when they are	(Model no	
	for fundamental stamic Discision and which can be not formed in a		
	rew fundamental atomic Phoeis's experiment which can be performed in a	:ZEA-01)	
	teaching laboratory		
	The set up consists of the following: -		
	High regulation fabric petro etalon FP-01		
	Mercury discharge tube, mt -01 (low pressure mercury discharge tube)		
	Power supply for MT-01, MTPS -01 (high voltage power supply of		
	discharge tube)		
	Narrow band interface filter IF -01		
	Central wave length: 546nm		
	T _{max} : 74%		
	HBW: 8nm		
	Polarizer with lens. PL-01		
	Ontical bench: OB -01		
	CCD company CCD 01 (high regulation CCD company)		
	Telescone with ferming lenge EL 01		
	Telescope with focusing lens: FL-01 Manitan 1422 to 1422 all streams and a surge 504 (item as 7 an assault 7)		
	Monitor 14": tv 14" electromagnet, emu -50t (item no / on pag no /)		
	Constant power supply DPS-50 (item no / on page no /)		
	Digital gauss meter DGM-202/DGM-1021 (item no 9/8 on page no 9/8		
	Result:		
	The interchangeable pattern is in the form of circular rings. this are split when		
	the magnetic field is switched on the amount of splitting depends on the		
	external magnetic field charge to mass ratio of electron and lade g-factor of		
	the electronic energy levels involved in the transition this later quantities can		
	be obtained from this experiment the result of this unit are within 5% of the		
	standard value		
09.	To study the PE Hysteresis loop of a Ferroelectric Crystal.	OSWA	
	Technical Specification		
	Sample Holder		
	Digital Temperature Meter $(0-600^{\circ}C)$		
	H T Supply variable from 0 to 5000V		
	In Supply valuater from 0 to 5000 v		
	Induit heating arrangement		
	On board controls		
	Connecting Leads		
	Instruction Lab Manual		
	The complete unit is fitted in a wooden box		
10.	True RMS A.C. Millivoltmeter	SES	Three
	Measures True RMS Voltage	Instrument	
	Accuracy 1%	MODEL NE:	
	High Input Impedance	ACM-102	
	High Stability		
	Excellent Linearity		
	Application: General purpose, indispensable to any electronics laboratory		
	Application: General purpose, indispensable to any electronics laboratory Voltage Range: 20mV, 200mV, 2A and 20V		
	Application: General purpose, indispensable to any electronics laboratory Voltage Range: 20mV, 200mV, 2A and 20V Freq. Range: 10Hz to 200KHz		
	Application: General purpose, indispensable to any electronics laboratory Voltage Range: 20mV, 200mV, 2A and 20V Freq. Range: 10Hz to 200KHz Display: 3 1/2 digit, 7 segment LED with autopolarity and designal		
	Application: General purpose, indispensable to any electronics laboratory Voltage Range: 20mV, 200mV, 2A and 20V Freq. Range: 10Hz to 200KHz Display: 3 ¹ / ₂ digit, 7 segment LED with autopolarity and decimal indication		
	Application: General purpose, indispensable to any electronics laboratory Voltage Range: 20mV, 200mV, 2A and 20V Freq. Range: 10Hz to 200KHz Display: 3 ½ digit, 7 segment LED with autopolarity and decimal indication		
	Application: General purpose, indispensable to any electronics laboratory Voltage Range: 20mV, 200mV, 2A and 20V Freq. Range: 10Hz to 200KHz Display: 3 ½ digit, 7 segment LED with autopolarity and decimal indication Input Impedance: 1 Mohm shunted by 25pf on all ranges		
11	Application: General purpose, indispensable to any electronics laboratory Voltage Range: 20mV, 200mV, 2A and 20V Freq. Range: 10Hz to 200KHz Display: 3 ½ digit, 7 segment LED with autopolarity and decimal indication Input Impedance: 1 Mohm shunted by 25pf on all ranges Accuracy: 1% (10Hz to 100KHz), 2% (100KHz to 200KHz)	H-h-	

12	L-C-R trainer kit (with frequency and voltage measuring unit)		Three
13.	Experimental setup to study electron spin resonance	SES	Three
14.	Experiment setup for measuring e/m by Thomson Method	SES (Model No. EMX-01)	Three
15	Experiment setup for measuring e/m by Thomson Method	Halmarc (Model No: HO-ED-EM- 03)	Three
16	Experiment setup for measuring e/m by Thomson Method	03)	Three
10	Technical Specification:		Intec
	Input: 230Volts 50C/s		
	E.H.T.: 800-1000Volts at 10Ma internally connect.		
	Deflection Volts: 0-50volts at 15mA internally connect.		
	L.T.: 6.3volts at 2A internally connect.		
	Horizontal Deflection: By Bar Magnets		
	Vertical Deflection: By internal built in supply		
	Provided with wooden stand, Deflection Magnetometer &		
	pair of bars		
	Cathode Ray Tube (CRT) is mounted on Wooden stand.		
	Power supply, filled with a digital volumeter to measure the deflecting		
	Bar MAGNETS (Permanent) one Pair		
	Compass box one set.		
	Wooden stand having two arms, fitted with scales to measure the distance		
	of the poles of the magnets. The stand can accommodate Cathode Ray Tube		
	in it's middle.		
	Another wooden stand is also provider to place the compass box in the		
	centre. This wooden stand also be mounted in the middle of the armed		
	stand.		
17.	Multimeter. Heavy duty	MECO	Three
1.0			
18.	Multimeter. Heavy duty with LCR measurement	CHY21	Three
18. 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & Do Modulation Trainer Franciscon Franciscon	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Provides Dual Sine wave of sine wa	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p.	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p,	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing,	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138,	CHY21 SNTPL	Three Three
<u>18.</u> 19.	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066	CHY21 SNTPL	Three Three
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18. 19. 20	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Study of Time Division Demultiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: -	CHY21 SNTPL	Three Three Three
18. 19. 20	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Study of Time Division Demultiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source.	CHY21 SNTPL	Three Three Three
18. 19. 20	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Study of Time Division Demultiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source, Sampling Frequency Generator,	CHY21 SNTPL	Three Three Three
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18. 19. 20	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Study of Time Division Demultiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source, Sampling Frequency Generator, PCM - modulator circuit using IC 4066, PCM - Demodulator using 7416 & DAC0800. Experiments: -	CHY21 SNTPL	Three Three Three
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18. 19. 20	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine wave form output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source, Sampling Frequency Generator, PCM - modulator circuit using IC 4066, PCM - Demodulator using 7416 & DAC0800. Experiments: - Study of PCM Modulation Study of PCM Modulation Study of PCM Demodulation	CHY21 SNTPL	Three Three Three
18. 19. 20	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two channel multiplexing & de-multiplexing, Two or DM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source, Sampling Frequency Generator, PCM - modulator circuit using IC 4066, PCM - Demodulator using 7416 & DAC0800. Experiments: - Study of PCM Modulation Study of PCM Demodulation Study of PCM Demodulation Study of PCM Demodulation Study of ADC Study of DAC	CHY21 SNTPL SNTPL	Three Three Three
18. 19. 20 20 21	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source, Sampling Frequency Generator, PCM - modulator circuit using IC 4066, PCM - Demodulator using 7416 & DAC0800. Experiments: - Study of PCM Modulation Study of PCM Demodulation Study of PCM Demodulation Study of PCM Demodulation Study of ADC Study of ADC	CHY21 SNTPL SNTPL SNTPL	Three Three Three Three
18. 19. 20 20 21	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Study of Time Division Demultiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source, Sampling Frequency Generator, PCM - modulator circuit using IC 4066, PCM - Demodulator using 7416 & DAC0800. Experiments: - Study of PCM Modulation Study of PCM Demodulation Study of ADC Frequency Division Multiplexing/De-Multiplexing Trainer Experiment Trainer board that Contains:- Crystal Frequency : 4 096 Mbz<	CHY21 SNTPL SNTPL SNTPL	Three Three Three Three
18. 19. 20 21	Multimeter. Heavy duty with LCR measurement Time Division Multiplexing Modulation & De-Modulation TrainerExperiment Trainer board that Contains:- Provides Dual Sine waveform output using IC TL084, Frequency of Sine wave -1 is 125 Hz with variable Amplitude of max.10V p-p, Frequency of Sine wave -2 is 200 Hz with variable Amplitude of max.4V p-p, Two channel multiplexing & de-multiplexing, Two TDM Clocks generated using 74138, TDM -modulator circuit using IC 4066 Experiments:- Study of Time Division Multiplexing Study of Time Division Demultiplexing Pulse Code Modulation & De-Modulation TrainerExperiment Trainer board that Contains: - Sine Wave Generator, DC Source, Sampling Frequency Generator, PCM - modulator circuit using IC 4066, PCM - Demodulator using 7416 & DAC0800. Experiments: - Study of PCM Modulation Study of PCM Modulation Study of ADC Study of DAC Frequency Division Multiplexing/De-Multiplexing Trainer Experiment Trainer board that Contains:- Crystal Frequency : 4.096 Mhz Carrier Generator : Sine wave 100 KHz & 200 Khz	CHY21 SNTPL SNTPL SNTPL	Three Three Three Three

 Audio Input Amplifier : Gain of 100 (approx.) Modulator / Demodulator : DSBSC Modulator/Demodulator Low Pass Filters : Second Order Butterworth filters with a cut off frequency of 10 KHz Experiments:-Study of Frequency Division Multiplexing / Demultiplexing with sinusoidal & audio inputs Study of Fourier Spectrum of FDM Study of DSBSC Modulation/Demodulation
 Three

 22
 Experimental setup to study ASK, PSK and FSK modulators
 Three

Principal/Officer-in-Charge Jhargram Raj College.

ARGRAM RAJ COLLEGE .07.2020

OFFICER -IN - CHARGE

Memo No.

Copy forwarded for information and taking necessary action to:

- 1. The Hon'ble District Magistrate, Jhargram
- 2. The Sub-Divisional Officer, Jhargram.
- 3. The Treasury Officer, Jhargram.
- 4. The Block Development Officer, Jhargram.
- 5. The Post Master, Jhargram.
- 6. The Chairman, Jhargram Municipality.
- 7. Dr. Gariam Gupta, Program officer, DBT, GoI, New Delhi
- 8. Dr. Tapas Kr. Adalder, Coordinator, DBT Star College Scheme, Jhargram Raj College.
- 9. College Notice Board.
- 10. Mr. Sayantan Roy, Convener website committee, Jhargram Raj College

Principal/Officer-in-Charge, Jhargram Raj College. 3037707 N WY 0247Hr 3037707 N 4301440

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Proforma for Quotation (Annexure I)

Sl. No.	Name of the instrument	Technical specification with make and model	Whether technical printed literature along with Bill of Material (BoM) submitted or not	Catalogue Price (INR)	% of discount on the catalogue price	Rate excluding GST after Discount

<u>Annexure – II</u>

FORMAT FOR MANUFACTURER'S AUTHORISATION LETTER TO AGENT (on letter head)

Ref. No. Date:

To, The Principal/Officer-in-Charge, Jhargram Raj College, Jhargram, West Bengal 721507

Sub.: Authorization Letter

Dear Sir, We, _____, who are established and reputed manufacturers of _____, having factory at _____, hereby authorize M/s._____ (name & address of Indian distributor /agent) to bid, negotiate and conclude the order with you for the above goods manufactured by us.

We shall remain responsible for the tender / contract / agreement negotiated by the said M/s. , jointly and severely.

We ensure that we would also support / facilitate the M/s ______ on regular basis with technology / product updates for upgradation / maintains / repairing / servicing of the supplied goods manufactured by us.

In case duties of the Indian agent / distributor are changed or agent / distributor is changed it shall be obligatory on us to automatically transfer all the duties and obligations to the new

Indian Agent failing which we will ipso-facto become liable for all acts of commission or omission on the part of new Indian Agent / distributor.

Yours faithfully,

[Name & Signature] for and on behalf of M/s. _____ [Name of manufacturer]

Note: This letter of authorisation should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer. A copy of notarised power of attorney should also be furnished.

Bidders Information (Annexure-III) (On bidder letterhead)

- 1. Name of the party (In Capital letter):
- 2. Permanent address (proof needed):
- 3. (a) Name of the Contact Person
 - (b) Contact No.
 - (c) Email.ID
- 4. Communication address (proof needed)
- 5. Trade license No. & date: (Renewed)
- 6. (a) PAN card No. (Business):
 - (b) (GST No.)
 - (c) Annual Turn Over (Prof Needed)
- 7. Nature of business
- 8. Bank detail (Kindly attach scanned copy of one Cheque) a. A/C No.
 - b. Name of the Bank and Branch
- 9. Other Relevant Information of the Bidder:

N. B.: Copy of the documents should be furnished along with the application. I declared that all terms and conditions will be followed by me and the submitted documents are true to the best in my sound knowledge and belief.

Dated:

Signature of Party (With seal)

Annexure-IV

FORMAT FOR self-declaration of NON-BLACKLISTING OF SUPPLIER (On letter Head)

I/ We ______Manufacturer/partner/Authorized Distributor/Agent (strike out which is not applicable) of (Supplier) _______ do hereby declare and solemnly affirm that the individual/firm/company is not black-listed by the Union/State Government/Autonomous body. We hereby confirm that the we will withdraw our bids if the tender inviting authority find us guilty of blacklisting by any authority across the country or the tender inviting authority can cancel our entire bid at any point of tender process.

Signature of the Deponent

Address _____