SAHRDAYA
College of Engineering & Technology

Kodakara – Thrissur - 680684

Invitation of Quotations for

AICTE-MODROB ASPIRATIONAL on "Modernization and removal of obsolescence of Clinical Instrumentation Laboratory" F.No.9-56/IDC/MOD-ASP/Policy-1/ 2021 - 22

Ref: SHR/MODROB-ASP/BME/Equipments/Date: 21/11/2022

Contact Person: Dr. Finto Raphel
HOD, BME and Coordinator
Mobile Number- 9995078358

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Ref: SHR/MODROB-ASP/BME/ Equipments / Dated: 21-11-2022

INVITATION OF QUOTATION

Name of Work: Purchase of equipments under AICTE MODROB-ASPIRATIONAL
at
Department of Biomedical Engineering., Sahrdaya
College of Engineering and Technology, Kodakara,
Thrissur-680684

Sir,

You are invited to submit your most competitive quotation for the supply of equipments. The details are as below

Sl. No.	Description of equipments	Details of the work/ Specifications	Quantity	Rate Rs.	Amount Rs.
1.	Simulator for the multiparameter patient monitor with SPO2 Analyzer	For detailed specifications, refer to Annexure I	1		
2.	Gas Flow Analyzer	For detailed specifications, refer to Annexure I	1		
3.	Infusion Device Analyzer	For detailed specifications, refer to Annexure I	1		
4.	Defibrillator Analyzer	For detailed specifications, refer to Annexure I	1		

Warranty / Support:

1. The item covered by the requirement's schedule shall carry a minimum of **Two years** of comprehensive warranty from the date of acceptance of the

equipment by Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684. Warranty shall include free maintenance of the equipment supplied, including free replacement of parts. The defects, if any, shall be attended to immediately, but in no case should any defect be prolonged for more than 24 hours. The comprehensive warranty includes an onsite warranty with parts.

2. The defects, if any, during the guarantee/warranty period are to be rectified free of charge by arranging free replacement wherever necessary. This includes cost and insurance.
3. It should be possible to contact the vendor support Center on a toll-free number/web/mail.
4. An undertaking from the manufacturer is required stating that they would facilitate the BIDDER regularly with technology/product updates & extend support for the warranty.
5. Commencement of Warranty period: An item's warranty period shall commence after the satisfactory installation/commissioning/demonstration date at the project site in Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684. The warranty period shall be extended for the period of delay in satisfactory installation and delay in warranty services.
6. The calibration certificates of the equipment shall be valid for one year from the date of satisfactory installation/commissioning/demonstration.

Terms and Conditions

1. Required accessories for installation, testing, and commissioning of the equipment are to be supplied by Vendor.
2. The bidder should provide an OEM certificate for the equipment.
3. The agency should follow all safety norms as per IS code for manufacturing, transport, installation, and commissioning.
4. Penalty for delayed services / LD

    a If the Supplier fails to Supply, Install and Commission the system as per specifications mentioned in the order within the due date, the Supplier is liable to pay liquidated damages of 0.5% of the order value per every week of delay subject to a maximum of 10% beyond the due date. Such money will be deducted from any amount due or which may become due to the Supplier.

    b Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684, reserves the right to cancel the order if the delay is more than ten

weeks.

5. The bidder should have at least three years of experience supplying, commissioning, and testing the equipment and should attach the required document with tender

6. The calibration charges for the quoted equipment for two years after the initial calibration shall be explicitly mentioned in the quotation, and an agreement shall be signed with the institution.

7. The bidder shall provide training sessions/workshops with qualified trainers free of cost to the internal stakeholders every year for five years from the date of satisfactory installation/commissioning/demonstration of the equipment.

8. The bidder should be ready for the demonstration of the equipment before the project evaluation committee for the verification of technical specifications.

9. The bidder should submit the GST registration document along with the tender.

10. Special Conditions for the work:

    a If during the course of installation and testing within the premises of Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684, any mishap/accident occurs causing injuries to the employees or representatives of Bidder/agency/firm, necessary compensation as required by the statute will be borne by Bidder/agency/firm itself, and Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684 is indemnified against all claims on such accounts.

    b All the staff deployed by Bidder/agency/firm will ensure that they are polite and courteous in their behavior. They shall carry their photo identity card prominently displayed during working hours.

    c The Bidder/agency/firm shall not do or cause to do or permit to do any act which would amount to nuisance or annoyance to Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684, and shall not do or permit to do any immoral acts in the premises of Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684, and shall not do any act or things where by Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684, suffers any loss or damage or which may cause any disturbance to Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684.

    d All work shall be carried out with due regard to the convenience of Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684. The orders of the concerned authority shall be strictly observed.

11. The quotations should be downloaded from the college website and submitted in the format given above to the Department of Biomedical

Engineering, Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684, during working days.

12. The quotation should be duly signed and addressed to The Principal, Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-680684, and submitted in a sealed envelope.
13. Quotations will not be entertained by E-mail / FAX.
14. All duties, taxes, and other levies payable by the bidder need to be included in the total price, and a break up needs to be indicated.
15. The prices should be quoted in Indian rupees only.
16. The rates quoted by the bidder shall be fixed for the product, and an escalation clause is not allowed.
17. The supply/work should be completed within 15 days from the date of the work/purchase order.
18. We look forward to receiving your Quotations and thank you for your interest in this project.
19. Payment will be made within 30 days after the successful commissioning and testing of the work. No advance payment will be given.
20. The Institute reserves the right to cancel any of the item tender items without any reason
21. The Institute reserves the right to accept or reject any or all quotations.
22. The Institute reserves the right to cancel the tender without any reason thereof.
23. The various time limits are as follows.

Activity	Date	Time
Start of submission of quotation	21/11/2022	11.00 am
Last date of submission of quotation	02/12/2022	4.00 pm
Opening of Quotations	05/12/2022	11.30 pm

Sd/-
Principal
Sahrdaya College of Engineering and Technology, Kodakara, Thrissur-68068

ANNEXURE I

1. TECHNICAL SPECIFICATION FOR MULTIPARAMETER PATIENT MONITOR SIMULATOR WITH SPO2 ANALYZER

Sl No	Description of Technical Specification
1	Operating Requirements
	a. The Devices Should be portable and offer simple testing for patient monitoring checks
	b. Should offer a check for ECG, respirator, IBP/NIBP testing
	c. User-friendly Display
	d. The device should be (Rechargeable) battery operated
2	ECG
	a. Should provide a reference ECG Waveform for testing with an amplitude of
	b. Amplitude accuracy should be within +/- 5%.
	c. Should provide reference ECG rates within the following range, i.e., 30BPM-320BPM
	d.Should provide the option for selection of adult or neonatal waveform
	e. Should be able to provide a reference for various arrhythmias
3	Respiration: The analyzer should be able to Provide reference breath rates from 0-100 in
4	IBP: The device should be able to provide a reference pressure with an accuracy of (+/- 1% of the setting + 1 mm of Hg). The devices should be able to simulate both adult and neonatal pressure.
5	NIBP
	a. The manometer should have a range of 10-400mmHg with a resolution of 0.1 mmHg and
	c. Should have presets for simulation of normal, hypertensive, and hypersensitive
6	SPo2 Analyzer
	a. SPO2 Saturation Range: 80%, 85%,90%,95%, 97%,98%,99%,100%
	b. Heart Rate: 30,40,60,65,80,100,120,140,150,180 & 240 BPM
	c. The device should select Transmission Level (Finger) – Dark/Think, Normal, and light/Thin
	d. The device should simulate Artifacts – Respiration, Ambient Light (50Hz or 60
	e. The device Should simulate Perfusion Index
	f. The device should have a select Manufacturer specific R curve for Spo2 Measurement supporting maximum manufacturers.
7	Environmental Specification:
	a. Operating temperature 0 ºC to 35 ºC
	b. Storage temperature -35 ºC to 50 ºC
8	Equipment should be CE or FDA approved
9	Computer control: The Product can be fully controlled from a PC software for

2. TECHNICAL SPECIFICATION FOR GAS FLOW ANALYZER

Sl No	Description of Technical Specification
1.	The Devices Should be portable and offer simple testing for all types of Ventilators, Bipap, Cpap, and other Flow, pressure & volume related medical device checks and
2.	The device should be Measure Both Bi-directional and unidirectional for inspired & Expired flow,
3.	Singleequipment measuring all parameters flow, volume, pressure, O2 %, temperature and Rh with single Color Display touchscreen
4.	Single Screen displaying all parameters like flow, volume, and pressure for the entire range up
5.	The device should Measure Altitude, Humidity, and Temperature on the same Board
6.	The device should Display of minimum, maximum, average flow/pressure/volume in real-time in graphical format
7.	The device should show a Waveform display of flow, volume, pressure, O2
8.	Sensors capable +/- 300 LPM
9.	Volume Measurement Range: ±100 L Accuracy ±2.0 % or 0.02 L
10.	High-pressure Range -0.8 to 10 bar Accuracy ±1 % or ±0.007 bar
11.	Differential low-pressure Range ±160 mbar Accuracy ±0.5 % or ±0.1 mbar
12.	Airway pressure Range ±160 mbar Accuracy ±0.5 % or ±0.1 mbar
13.	Temperature Range 0 to 50 °C Accuracy ±0.5 °C
14.	The device should be capable of changing different units for flow, volume & Pressure
15.	Oxygen Range 0 to 100 %
16.	The device should be (Rechargeable) battery operated
17.	Breath rate range 1 to 1500 bpm, Breath rate accuracy ±1 %
18.	Inspiratory to expiratory time ratio (I: E) ranges 1:300 to 300:1. Inspiratory to expiratory time
19.	The device should select different Gas- Air, Nitrogen (N2), Nitrous Oxide (N2O), Carbon Dioxide (CO2), Oxygen (O2), Argon, Heliox (21 % O2, 79% He),
20.	The device should select correction modes of ventilators - ATP (ambient temp/pressure, actual humidity), ATPD (ambient temp/pressure, dry), ATPS (ambient temp/pressure, saturated) STP20 (20 °C temp/pressure 760 mmHg, actual humidity), STP21 (21 °C temp/pressure 760 mmHg, actual humidity), STPD0 (0 °C temp/pressure 760 mmHg, dry), STPD20 (20 °C temp/pressure 760 mmHg, dry), STP or STPD21 (21 °C temp/pressure
21.	The device should have a memory option to store and retrieve the data
22.	Equipment should be CE or FDA approved
23.	Computer control: The Product can be fully controlled from a PC software for Analyzer

3. TECHNICAL SPECIFICATION FOR INFUSION DEVICE ANALYZER

Sl No	Description of Technical Specification
1	Operating Requirements
	a. The Devices Should be portable and offer simple testing for all types of Infusion / Syringe pump checks and troubleshooting
	b. The device should have touchscreen access to various checks and controls
	c. The device should be (Rechargeable) battery operated.
	d. The device should display flow rate, Volume, Time, Back pressure, and Deviation
	e. The Device should be lightweight
2	The device should have a memory option to store and retrieve the data
3	Power down: Save option
4	Computer control: The Product can be fully controlled from a PC software for
5	Flow Measurement Range: 0.5 ml/h to 1000 ml/h
6	Volume Measurement Range: 0.06 ml to 999 ml
7	Pressure Measurement Range: 0 psi to 45 psi and equivalent in mmHg, Bar, and kPa
8	Equipment should be CE or FDA approved
9	Safety: IEC 61010-1: Overvoltage category II, Pollution Degree 2
10	Electromagnetic environment IEC 61326-1: Basic

4. TECHNICAL SPECIFICATION FOR DEFIBRILLATOR ANALYZER

Sl No	Description of Technical Specification
1	Operating Requirements
	a. The Devices Should be Compatible with all types of Defibrillators & AED checks and
	b. The device should be portable and battery operated
	c. The device should have house an inbuilt battery which shall provide adequate backup for
	d. The device should be compatible with all types of Defibrillator waveforms Lown, Edmark, trapezoidal, biphasic, and monophasic pulsed-biphasic defibrillation technology
	e. The Device should have an Inbuilt Paddle (Not an external paddle to connect) for
2	The device should stimulate; RA, LL, LA, RL, and V1-V6, with independent outputs Lead to lead impedance: 1000 Ω (nominal)
3	The device should have a non-inductive test load of 50 ohms built into the unit.
4	The device should measure the following functions – Energy discharge, Charge time, Cardiac
5	Energy Range Measurement:0.1 J to 600 J, Accuracy 0.1 J to 360 J: ± (1 % of reading +
6	Synchronization test (elective cardioversion) : Range: -120 ms to 380 ms, Accuracy: ±
7	Charge Time Range: 0.1 s to 100 s & Accuracy ± 0.05 s, typical
8	ECG Range: 10 BPM to 300 BPM in 1 BPM steps & Accuracy ± 1 % nominal
9	ECG Amplitude Range: 0.05 mV to 0.45 mV by 0.05 mV steps and 0.5 mV to 5 mV by 0.5
10	The device should able to simulate 25 plus Arrhythmia selections

11	Equipment should be CE or FDA approved
12	Safety standards CE: IEC/EN61010-1 2nd Edition
13	Electromagnetic compatibility standards (EMC) European EMC: EN61326-1
14	The device should have the option for BNC connector for viewing ECG Graph
15	The device should simulate performance waves: Square wave 2 Hz and 0.125 Hz Triangular wave 2 Hz and 2.5 Hz Sine waves 0.05, 0.5, 5, 10, 40, 50, 60, 100, 150, and 200
17	Computer control: The Product can be fully controlled from a PC software for Analyzer