MORARJI DESAI NATIONAL INSTITUTE OF YOGA

(An autonomous organization under Ministry of AYUSH, Govt. of India)
68, Ashok Road, Near Gole Dak Khana, New Delhi – 110 001
Phone: 23730417-18, 23721472. 23351099, Telefax – 23711657, 23718301
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File No.MDNIY/S&P/2017-18/571 Dated: 16th Nov., 2018

Notice Inviting Tender (NIT) for procurement of instruments, reagents and consumable items for Biochemistry Lab in MDNIY

Morarji Desai National Institute of Yoga (an autonomous organization under the Ministry of AYUSH, Govt. of India, New Delhi) invites sealed quotations in three bid system- (EMD, Technical Bid & Financial Bid) – from the reputed firms for procurement of instruments, reagents and consumable items for Biochemistry Lab in MDNIY, as per specifications and quantity of each item at Annexure-'A'.

Schedule of Invitation of bid:

Tender Cost:	**Rs.33,25,000/-**
Date of Issuance of NIT	**19.11.2018**
Last date and time of submission of bid document	**10.12.2018 up to 11.00 AM**
Bid document to be submitted to	**Director, Morarji Desai National Institute of Yoga, 68, Ashok Road, New Delhi-110001**
The EMD to be submitted	**Rs.1,66,000/- (Rupees one lakh sixty six thousand only) in favour of "Morarji Desai National Institute of Yoga" through Bank Draft/ Pay Order only**
Tender Fee to be submitted separately	**Rs.1,000/- (Rupees one thousand only) in favour of "Morarji Desai National Institute of Yoga" through Bank Draft/ Pay Order only**
Date and time of opening of Technical bid document	**10.12.2018 at 11.30 AM**
Date and time of opening of Financial Bid	**Shall be opened on 12.12.2018 at 11.00 AM only of those bidders who qualify in the Technical bid as per Check-list enclosed at Annexure-'C'.**
Number of pages	**20 pages**

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Terms and Conditions are mentioned below:

1. The Sealed Technical quotation/bid with the EMD amounting to Rs.1,66,000/- (Rupees one lakh sixty six thousand only) and Tender Fee amounting to Rs.1,000/- in favour of "Morarji Desai National Institute of Yoga" through Bank Draft/Pay Order only, with supporting self attested documents in one envelope and Financial bid separately in the envelope will be submitted addressed to the Director, Morarji Desai National Institute of Yoga (MDNIY), super scribing on the top of envelop as "Quotation for supply of Laboratory Items", should reach this office latest by 10.12.2018 up to 11.00 am.

2. The quotations will be opened on the same date i.e. **10.12.2018 at 11.30 am** in the presence of the bidder(s) or their nominated/authorized representative, if present.

3. The supply of items should be as per specifications quoted by the firm with good quality of items. If quality of the items found defective, the responsibility lies with the firm. MDNIY will not bear any responsibility for the payment partly or fully.

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4. The rates should be inclusive of delivery charges.

5. Quotations received after closing date and time will not be entertained

7. The bidder shall submit the Technical Bid /quotation letter against item mentioned above, with EMD, with all documents (self attested) and Financial Bid quoting rate against item separately without which the quotation will not be entertained and considered.

8. The firm which has quoted the lowest rates and are successful in getting the award letter but are unable to accept the contract due to any reason, their EMD will stand forfeited.

9. The rates once approved and accepted, will be valid initially for a period of one year from the date of issuance of the 1st work order including supply of additional quantity of all or any of the item(s) from time to time at a later date, on the same rates, terms and conditions as may be decided by the MDNIY.

10. The quantity mentioned against each item may be increased/ decreased as may be decided by MDNIY.

11. If the delivered item(s) is/or found to be defective or not as per specifications the same shall be returned and replaced at the firms cost & no payment will be made by MDNIY for such replacement.

12. The most important and critical part and essence of the contract and issue of award letter to the successful bidder(s) is the timely delivery and installation, within 10 days from the date of placing confirmed work order, as ordered, within the scheduled date and time.

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13. The Performance Security @ 10% of the actual cost of the successful bidder shall be kept during the currency period to safeguard the interest of the Govt. to ensure that the supplier supply the good quality items un-interrupted ordered by MDNIY. The Performance Security shall be refunded to the bidder after 60 days of the completion of contract period.

14. If any organization have any objection please contact via Speed Post addressing Director within 07.12.2018.

15. MDNIY has a full right to withdraw the Tender at any time without assigning any reason thereof.

16. The payment will be made as per Govt. Rules and Procedure, after successful installation of the equipments.

17. The institute reserves the right to accept or reject any quotation without assigning any reason thereof.

18. All the disputes shall be subject to Delhi Jurisdiction only.

Yours faithfully

(P.C. Joshi)
Accounts Officer
for Director

Copy to:-
C&DO – With the request to upload the same on the Institute's website and Govt. Portal.

Annexure-'A'

List of the Instruments to be procured for Biochemistry Laboratory

Sl. No.	Items required	Qty.
1	Semi-automatic biochemistry analyzer	1
2	3 parts Haematology analyser	1
3	Blood Gas analyser	1
4.	Urine 10-15 parameters test strips (50 strips/pack)	10
5	UV-Vis microplate spectrophotometer	1
6	Double distilled water unit	1
6	Ice flaking machine	1
7	Mini spin centrifuge	1
8	Vortex Mixer	1
9	Shaking Water bath	1
10	Magnetic stirrer hot plate with 2 magnetic beads	1
11	Variable volume pipette T2, 0.5-2 ul, Autoclavable	1
12	Variable volume pipette T20, 2-20 ul, Autoclavable	1
13	Variable volume pipette T200, 20-200ul, Autoclavable	1
14	Variable volume pipette T1000, 100-1000ul	1
15	8 Channel variable volume pipette, 50-300ul	1
16	Benchtop refrigerated centrifuge with 2 fixed angle rotors (10-20 x15ml, 20x2ml) & suitable voltage stabilizer	1
17	pH meter	1
18	Refrigerator (4-10 degree celcius) 200 ltrs	1
19	Deep freezer (-20 degree celcius) 100 ltrs	1
20	**Laboratory Chemicals**	
	Acetic acid powder Analytical grade	500 gm
	Silica Gel Powder with calcium sulphate ($CaSO_4 \cdot \frac{1}{2} H_2O$) for Thin layer chromatography	500 gm
	Glycine, amino acid	100 gm
	Tyrosine , amino acid	100 gm
	Leucine, amino acid	100 gm
	Aspartic acid, amino acid	100 gm
	Ferric Chloride solution	500 ml
	Ninhydrin powder	250 gm
	Sodium pyruvate	500 gm
	Aspartic acid	500 gm
	Potassium Dihydrogen phosphate	50 gm
	Alanine	500 gm
	Sodium bicarbonate	500 gm
	Sodium carbonate	500 gm
	Anhydrous Sodium carbonate	500 gm
	Disodium Phenylphosphate	100 gm
	Sulphuric acid	500 ml
	Potassium ferricyanide	250 gm
	Amino antipyrine	250 gm
	Alpha ketoglutaric acid	100 gm
	Barium hydroxide	250 gm
	Zinc sulphate	1 gm
	Folin & Ciocalteu's phenol reagent	500 ml
	Rochelle salt	500 gm

List of the Instruments to be procured for Biochemistry Laboratory

Sl. No.	Items required	Qty.
	Copper sulphate	50 gm
	Ammonium molybdate	100 gm
	Pure dextrose	500 gm
	Soluble starch	100 gm
	Potassium iodide	100 gm
	Potassium hydroxide (KOH)	200 gm
	Benzoic acid	500 gm
	Ferric chloride solution	1 ltr
	Dry cholesterol	25 gm
	Barium hydroxide	250 gm
	Phenophathelin indicator	500 gm
	Phosphoric acid	500 ml
	Diacetyl monoxime	500 mg
	(2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) ABTS powder	5 gm
	(6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid) Trolox powder	5 gm
	Salivary cortisol kit (96 test)	4 kit
	Bradford reagent	500 ml
	Bovine serum albumin lyophilized powder	100 gm
	Ethanol (500 ml/bottle)	4 bottles
	Methanol	500 ml
	Isopropanol	500 ml
	Propan-2-ol	500 ml
	Ammonia solution	200 ml
	DMSO	500 ml
	Diethyl ether	500 ml
	pyridine sulphate di-bromide	500 ml
	Chloroform	500 ml
	Sodium thio-sulfate	500 gm
	Kerosene/fuel for Bunsen burner	500 ml
	Ultra pure (double distilled) laboratory grade water	20 ltrs
21	**Laboratory plasticware and glassware**	
	Test Tube Holder (for student)	15
	Bunsen Burner	10
	Borosilicate glass test tubes (15 ml)	100
	Thin Liquid Chromatography plates (Glass backed, Plain Silica gel60) 5x10 cm	100
	Volumetric glass Burette (25 ml) with bottom opening stopclock	10
	Burette stand with clamp	10
	Buchner funnel	10
	Volumetric flask	20
	Chromatography paper sheet (10 Wx 30 L)100 sheets	1 pack
	Glass Beakers (500 ml) (6 per pack)	2 pack
	Polypropylene Measuring Cylinder (500 ml)	15
	Glass rods	15
	Vacutainers (sodium edta)	200
	Vacutainer (grey, sodium fluoride)	200
	Vacutainers (red)	200

List of the Instruments to be procured for Biochemistry Laboratory

Sl. No.	Items required	Qty.
	Urine/sputum collection tubes Polypropylene, plastic cap, 10-30 ml capacity, sterile	300
	96 well plates , flat bottom, transparent, with lid, for biochemical assays	300
	Universal pipette tips, MicroTips 200-1000ul, Medical grade virgin polypropylene, Autoclavable, Sterile, Dnase, Rnase,Pyrogen Free, 500 tips/pack	1000
	Universal pipette tips, MicroTips 10 ul, Medical grade virgin polypropylene, Autoclavable, Sterile, Dnase, Rnase,Pyrogen Free, 1000 tips/pack	1000
	Microcentrifuge tube, Capacity – 1.5 ml Colour of Tube - Transparent or Clear, Type of Cap - Snap Cap, Overall Tube Length - 40 mm, Autoclavable, Tubes stay sealed during boiling, freezing or centrifuging, and are still easy to open afterwards, pack size – 500 tubes/pack	1000
	Spatula for weighing of dry powders, stainless steel, maximum capacity- 1gm	1
	pH Strips (6-8 range) 10/pack	1 pack
	Empty Tip box with cover (for 1000 ul tip), polypropylene	2
	Empty Tip box with cover (10 ul tip), polypropylene	2
	Wash bottle , capacity 250 ml	10
22.	Accessories for equipments (UPS, Stabilizers etc.)	

TECHNICAL SPECIFICATION FOR BIOCHEMISTRY INSTRUMENTS

SEMI-AUTOMATED BIOCHEMISTRY ANALYSER

1. The instrument should be semi-automated, compact, light weight and benchtop.
2. Should be microprocessor controlled general purpose bi-chromatic photometer system with at least 6 filters ranging from 340 to 630 nm.
3. Approximate dimension : 470 mm (H) x 440 mm (W) x 230 mm (D)
4. Approximate net weight : 7-15 kg
5. Should be able to maintain Temperature 37 degree Celsius, self-monitoring built-in incubation systems for temperature controlled absorbance reading.
6. The instrument should use small sample size – 10-50 ul samples (blood/plasma/serum/saliva/urine).
7. Light source: Tungsten/ halogen or higher grade with one additional bulb.
8. Should have end point, kinetic and two point kinetic measurement modes.
9. Should have flow cell measuring device.
10. Should have external printer connection facility, generate full report and with data backup storage/memory with USB port and RS232 port facility
11. Should have a measurement range from 0.001 to 3.000 Abs
12. Should have facility for reading results on LCD display. If any software required, it should be compatible with windows 7 or updated version (not window vista or XP).
13. Should have quality control: two control/test QC survey of at least 30 points, with generation of standard QC charts (for eg. Levy Jenny plot).
14. Should have a filter half bandwidth of 10nm or lesser.
15. Should be provided with sample carry over prevention facility.
16. Aspiration should be based on Bellow/Peristaltic Pump/ Vacuum pump.
17. Should be provided with standard accessories and sample reagents and Quality control reagents as per the rule.
18. Reagents supplied should have at least six months or more shelf life.
19. All consumables should have at least 45 days on-board stability.
20. Should be supplied with on line pure sine wave 2 KVA UPS of sufficient capacity for a minimum backup of 2-3 hours.
21. Should be provided with calibration certificate issued by the manufacturer at the time of installation
22. With 2 years standard warranty period and with provision of extended warranty and AMC facility. Calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period.
23. Should have safety certificate from a competent authority CE / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid. ISO certificate should be included.
24. After receipt and acceptance of material at Stores, supplier shall install & commission the equipment with training of 2 people at their cost. What so ever expenditure incurred for the above shall be borne by the supplier.

HAEMATOLOGY ANALYSER

1. The instrument should be automated, compact, light weight, benchtop, with three part differential, 15-25 parameter haematology analysers offering automatic start up, shut down and sample analysis.
2. The instrument should be able to report 15-25 parameters. (For eg: WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW-SD OR CV, PLT, NEUT%, LYMPH%, MIX%, NEUT#, MIX#, PDW, MPV, P-LCR) with histogram for WBC, RBC and Platelets.
3. The instrument should have throughput of atleast 20-60 samples per hour with small sample size – 10-50 ul sample requirement.
4. The instrument should have multi channel analysis for better resolution.
5. The instrument should have impedence method for RBC/Platelets/WBC counting.
6. The instrument should have cyanide free colorimetric method for the haemoglobin measurement.
7. The instrument should have option for RS232 port and integration with LAN for intranet/internet.
8. The instrument should have external printer attachment facility which can generate full report with histograms and with data backup storage with USB port facility
9. The instrument should have internal and international quality control support.
10. The instrument should be CE marked/FDA (US) approved
11. Approximate Dimensions (W x D x H): 320 mm x 260 mm x 365 mm, small and compact system.
12. Net Weight: 10-15 kg
13. Should be provided with standard accessories and sample reagents as per the rule and Quality control reagents.
14. Reagents supplied should have at least six months shelf life.
15. All consumables should have at least 45 days on-board stability.
16. Should be supplied with on line pure sine wave 2KVA UPS of sufficient capacity for a minimum back of 2-3 hours
17. Should be provided with calibration certificate issued by the manufacturer at the time of installation
18. With 2 years standard Warranty period with provision of extended warranty and AMC facility. Calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period.
19. Should have safety certificate from a competent authority CE / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid. ISO certificate should be included
20. After receipt and acceptance of material at Stores, supplier shall install & commission the equipment with training of 2 people at their cost. What so ever expenditure incurred for the above shall be borne by the supplier

BLOOD GAS ANALYSER

1. The instrument should be automated, compact, light weight and benchtop electrolyte analyser.
2. Approximate dimensions: 12x12x16 cms.
3. Approximate Weight : 8-15 kg
4. Should be able to measure directly pH, PCO_2, PO_2, Sodium, Potassium, Chloride, and Calcium in a single run.
5. Should have minimum 15 calculated parameters including SaO_2,Bi-carbonate (HCO_3), Standard HCO_3, Base Excess of Blood (BE), Base Excess of extra cellular fluid
6. Should have a sample through put of minimum 20 samples per hour.
7. Should have an automatic calibration for all the measured parameters without the use of gas cylinder
8. Electrode should be individual with ON/OFF facility and durable.
9. Should have an inbuilt printer and minimum inbuilt memory of 100 samples with external printer attachment facility which can generate full report and with data backup storage with USB port facility.
10. Warm up time should be less than 30 minutes
11. Reagent pack, deprotieniser, printer paper and one three level quality control should be provided as per the rule.
12. Should work on 200-240Vac 50Hz power supply.
13. Should be supplied with on line pure sine wave 2KVA UPS of sufficient capacity for a minimum back of 2 hours.
14. Should be provided with calibration certificate issued by the manufacturer at the time of installation
15. With 2 years standard Warranty period with provision of extended warranty and AMC facility. Calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period.
16. Should have safety certificate from a competent authority CE / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid. ISO certificate should be included
17. After receipt and acceptance of material at Stores, supplier shall install & commission the equipment with training of 2 people at their cost. What so ever expenditure incurred for the above shall be borne by the supplier
18. All types of electrodes supplied initially shall have one year warranty and there after any types of electrodes supplied shall have six months warranty.
19. Reagents supplied should have at least six months shelf life.
20. All consumables should have at least 45 days on-board stability.

URINE STRIP

Should be able to test for up to 11or more parameters in a single strip using the provided colour chart, the results should matched to ascertain concentration levels of substances within the urine, and should be provided in canisters of 25, 50 and 100 pieces

UV-VIS MICROPLATE SPECTROPHOTOMETER

1. Detection modes Absorbance
2. Read methods Endpoint, kinetic, spectral scanning, well area scanning.
3. Approximate dimensions: 12x12x16 cms.
4. Approximate Weight : 8-15 kg
5. Microplate types 6- to 384-well plates Other labware supported Take 3 Micro-Volume Plates
6. Light source Xenon flash Detector photodiode Wavelength selection monochromator
7. Wavelength range 200 to 999 nm, in 1 nm increments Monochromator bandwidth5 nm Dynamic range 0 - 4.0
8. Instrument should have 2 monochromators for photometric (UV and Vis) measurement.

9. General

- The Instrument should have spectral scanning microplate reader with, photometric detection technologies and supports endpoint, kinetic and spectral scanning measurements.
- Instrument should have 2 monochromators for photometric (UV and Vis) measurement.
- Instrument should automatically calibrate results
- Instrument should has a reference detector

10. Microplates

- Instrument should read plate formats of 6- to 384-well plates in absorbance mode.
- Instrument should read custom microplate formats (Any company made; not only one specific company made).
- Instrument should read plates with lids and without lids both (Highly preferred).
- Monochromator wavelength accuracy should be ±2 nm or less
- Operational range of 200-1000 nm in photometry
- Linear measurement range in photometry should be 0-4Abs
- Accuracy in photometry should be: ±2% or 0.003 Abs, whichever is greater, at 200-399 nm (0-2Abs) ±1% or 0.003 Abs, whichever is greater, at 400-1000 nm (0-3Abs)
- Instrument has on-board path length correction for direct quantization

11. Incubation

Instrument should have temp. Controller: + 4°C to 45°C or more. Onboard incubator must function by preventing condensation on a microplate lid to enable reading through the lid even during long kinetic assays (at least 24 hours).

12. Dispenser

- Instrument should contain 2 or more on-board dispensers.
- Instrument should have automatic plate check to prevent accidental dispensing of reagent.
- Volume and priming check facilities should be there.
- Dispense volume: 1 - 1000 µl or more in 1 µl increment

13. Shaking

- Orbital shaking with adjustable timing, speed and diameter. Shaking should be computer controlled (by software).

14. Software

- Software should be multi-licensed and should be compatible with windows 7 or updated version. Software must be included in price.

15. Should be supplied with on line pure sine wave UPS of sufficient capacity for a minimum back of 30 minutes.
16. Standard PC and printer

17. Should be provided with calibration certificate issued by the manufacturer at the time of installation
18. With 3 years or above standard Warranty period and AMC facility. Calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period.
19. Should have safety certificate from a competent authority CE / FDA (US) / STQC CB certificate / STQC S certificate or valid detailed electrical and functional safety test report from ERTL. Copy of the certificate / test report shall be produced along with the technical bid. ISO Certificate should be included.

DOUBLE DISTILLATION WATER SYSTEM

1. Distilled Water Output Capacity Capacity: to produce 2.5 L/hr.
2. Made of high quality heat resistant glass cylinders and tubes and also resistant to minor damages.
3. Boiler portion made of high purity and good quality borosilicate material along with water level indicator.
4. Borosilicate condenser.
5. Heater is of high purity electronic grade transparent quartz type. Should avoid contact of embedded boiler with water.
6. Provision for easy cleaning and general maintenance of boiler
7. Demountable Boiler Panel Series
8. The resultant distillate obtained should be of high quality ultra pure water that is suitable for laboratory use including the HPLC operations.
9. Distillate should be free from organic, inorganic and colloidal solids. Constituents, metallic ions including heavy metals and also pyrogen free.
    - Conductivity <1x10-6 S/cm
    - Total Organic Carbon <500µg/l
    - Total Solids <0.1mg/lit

10. Distillation stand should be of high quality rust free metal with embedded clamps for perfect holding.
11. Apparatus compatible with single phase electrical supply within 250 volts range.
12. Energy efficient.
13. Provided with safety cutoff device.
14. Parts should be replaceable.
15. ISO accredited.
16. Accessories for Double Distillation Unit

- Closed cabinet should be there for safety.
- A reservoir should be there to reuse coolant water.
- Distillation Apparatus power supply (DAPS) for 2.5 ltrs model
- Water softener should be included
- Low temperature circulating water bath (Chiller)
- Working Temperature : -10°C to 100°C
- Temperature Accuracy: ±01°C
- Bath Volume : Minimum 5 litre capacity
- External water Circulation for continuous operation.
- User Manual should be provided along with the equipment

17 One year standard warranty at the minimum from the date of successful installation.
18. Training to be provided free of cost for two persons during the installation and commissioning.
19. Documents:

- Compliancy certificate is to be provided indicating conformity to the technical specifications.
- Guarantee certificate shall be furnished along with the supply.

20. Payment will be released after acceptance and establishing of performance Installation and commissioning:
21. After receipt and acceptance of material at Stores, supplier shall install & commission the equipment at their cost. What so ever expenditure incurred for the above shall be borne by the supplier.
22. Performance Certificate: For earlier / recent executed purchase order (at least 2 No's) shall be furnished along with the offer.

ICE FLAKING MACHINE

1. Stainless steel body and reentering door which assures an easier accessibility to ice
2. Stainless steel cabinet properly insulated
3. 5-20 kg/day production of ice flakes
4. Approximate Dimension (mm) : 300 x 493 x 547/380 x 543 x 722/548 x 611 x 883
5. Safety protection from water supply
6. Should come with 2 years standard warranty with provision of extended warranty and AMC facility.
7. Efficient cooling system with low noise and energy efficient compressors.
8. CFC free refrigerated ice flaker with insulated ice storage bin of capacity 10-20 Kg.
9. Complete with air cooled condenser and fan motors to keep the ice for longer period.
10. Auto cut off system.

11. Micro-processor base controller which stops the production when the bin is full and restarts when level goes down.
12. Water filter and failure protection device.
13. Should be provided with calibration certificate issued by the manufacturer at the time of installation
14. With 2 years standard Warranty period and provision for extendable warranty or AMC facility. Calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period.

SHAKING WATER BATH

Temperature Range	Ambient +2°C to 100°C	
Setting	Membrane keypad	
Control	Microprocessor	
Display	Digital to 0.1°C	
Shaking Mode	Orbital	Reciprocating

1. Removable shaking insert
2. Adjustable shaking frequency (20 to 400 rpm or 10-200 oscillations/min)
3. Integrated timer (0 ... 10 operating hours)
4. Ease of use Keypad with LED display
5. Lift-up bath covers in Makrolon® or stainless steel
6. Durable handles for easy positioning
7. Easy-access drain
8. High temperature stability (±0.2 °C or ±0.02 °C)
9. Wide selection of test tube racks
10. High quality stainless steel bath tanks
11. Integrated high performance heater for rapid heat-up
12. Motor should be maintenance free and brushless.
13. Should be provided with calibration certificate issued by the manufacturer at the time of installation
14. With atleast 2 years standard Warranty period and provision for extendable warranty or AMC facility. Calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period.

REFRIGERATED CENTRIFUGE:

1. Compact, light weight and benchtop
2. Speed limit max. ≥ 20,000 RPM
3. Cooling range ≤ 4 degree C to ambient
4. Digital Display for Speed
5. Provision for flash centrifugation
6. Regulator Switch for speed, time and temperature
7. Should be provided with fixed angle rotor with capacity to accommodate 0.5ml, 1.5ml and 2.0 ml, 15 ml and 50 ml tubes

8. Additional swing out type rotor may be quoted separately.
9. Should be supplied with on line pure sine wave 2 KVA or higher UPS of sufficient capacity for a minimum back of 2-3 hours.
10. Should be supplied 3 suitable rotors (fixed angle, 15 ml centrifuge tube, 50 ml centrifuge tube and 2 ml microcentrifuge tubes) and voltage stabilizer,
11. Should be provided with calibration certificate issued by the manufacturer at the time of installation
12. With atleast 2 years Warranty period and provision for extendable warranty or AMC facility. Calibration certificate should be issued for the machine by the supplier during preventive maintenance visit in the warranty/AMC period.

VORTEX

1. Small, compact, benchtop
2. Variable speed control
3. Heavy metal base & rubber feet to prevent movement of the shaker during use
4. Compact rugged construction, light weight.
5. Vortex Mixer with Infrared Technology
6. Includes Double operational Working Mode
7. Sensor (IR)/Continuous Mode Operation
8. Speed should be from 0- 3000 RPM
9. Orbit diameter: 4.5 mm
10. Approximate Dimensions (LxDxH): 180 x 220x x 70 mm
11. Loading Capacity: 0.5 kg
12. Mixer should be a small footprint, low profile, ergonomic design and three anti-sliding feet which absorb the vibration highest electric protection degree.
13. Power: 220 V, 50/60 Hz
14. To be supplied with the following component

- With speed control
- Spare cup attachment
- Spare one hand attachment Spare one hand insert Spare micro tube insert

MICRO CENTRIFUGE

1. Small, compact, benchtop, microcentrifuge for instant quick spin.
2. Approximate Dimensions : 17 W X 23 D X 18 H (cm)
3. Max RPM : 5000-13,500 RPM
4. Max capacity : 1.5 m (2.0 ml) x 12 tubes
5. Control : Digital Feedback control with jog shuttle, Switch (turn+ push)
6. Display : Digital back – tight LCD
7. Timer : 99 min. 59 sec. continuous mode
8. Cooling device : Air
9. Cooling Drive system : Brushless DC Motor,
10. Direct drive Acceleration time: 15 sec (for max speed)
11. Braking time : ≤ 15 sec (For max speed)
12. Safety system : Motor error detection, Auto stop when opening door
13. Noise level : ≤ 57 dB
14. Power : AC 230 V, 50 Hz

REFRIGERATOR (4^{0}C)

1. Vertical or Horizontal
2. Capacity (Gross): 180-250 Ltrs
3. Should be with Temperature: 0ºC to 10ºC
4. Should be frost free, CFC/HCFC Free,
5. Built in condenser
6. Built-in stabilizer
7. Inverter compressor
8. PUFF Insulation
9. Approximate Dimensions (inches) (WxDxH): 16 x 20 x 18
1. Door lock for safety, refrigerator stand
10. Provision for easy clean/removal of moisture
11. Provision for freely adjustable plastic-coated shelves
12. Optional : Digital Display
13. Standard warranty : 1 year on product and 4 years compressor
14. With extendable warranty and AMC option

DEEP FREEZER (-20^{0}C)

1. Vertical or Horizontal
2. Capacity (Gross): 90-120 Ltrs
2. Should be with Temperature: -18^{0}C -20^{0}C
3. Should be frost free, CFC/HCFC Free,
4. Built in condenser
5. With temperature control and stabilizer free operation
6. Inverter compressor
7. PUFF Insulation
8. Approximate Dimensions (mm) (WxDxH): 440 x 560 x 835
9. Door lock for safety
10. Provision for easy clean/removal of moisture
11. Provision for freely adjustable plastic-coated shelves
12. Optional : Digital Display
13. Standard warranty : 1 year on product and 4 years compressor
14. With extendable warranty and AMC option

MAGNETIC STIRRER HOT PLATE

1. Robust chemically resistant ceramic tops
2. Advance safety features including flashing hot warning light above 70°C,
3. Spill-proof design
4. Independent safety circuit to prevent overheating,
5. Powerful stirring
6. Ceramic plate material
7. Approximate Plate dimension (cm): 18x 18, small light weight.
8. Digital temperature control from 50°C – 500°C
9. Speed control: 100-1200 rpm

VARIABLE VOLUME MICROPIPETTES

1. Fully autoclavable, light weight, chemically resistant pipettes with high accuracy.
2. Four digit display having smooth stroke and easy aspiration/despising/ tip ejection.
3. Pipettes each of volume 0.5-2 µl, 2-20 µl, 20-200 µl, 100-1000 µl.

pH METER

Laboratory use pH meter (Kit should include arm and 2 pH electrodes PY-P10, power supply adaptor, calibration solutions and operation manual)

1. Microprocessor Based
2. Automatic Buffer Recognition: 4.00, 7.00 & 9.00 pH and Automatic push button 3 point calibration.
3. Automatic temperature compensation
4. Electrode check during calibration
5. Stability icon
6. Small, tabletop
7. Fitted with LED Display.
8. 8-12 hour battery life, and dual USB inputs
9. 1 year standard Warranty, with spare electrode.
10. BNC connector for glass membrane or Redox electrodes, 2.5 mm phone jack for temperature sensor

Measuring range

Voltage: 0 to +1800.0 mV, pH: - 2.00 to +15.00, Temperature: -5.0 to + 105.0°C

Resolution

Voltage in mV: 0.1, pH: 0.01, Temperature in K: 0.1

Accuracy

Voltage in mV: 0.2 (Or 0.05 % from < -400 mV and > +400 mV), pH: 0.005, Temperature in K: 0.2)

Operation keys: •Standardize •Mode •Setup •Enter

Approximate Dimensions: Meter (LxWxH) 229x121x79 mm

Approximate Dimensions Box (LxWxH) 300x250x220 mm

All the chemicals should be bio-chemical laboratory grade (Analytical grade).

Note: To be quoted with suitable stabilizer

Annexure-'B'

Financial Bids
Instruments to be procured for Biochemistry Laboratory

Sl. No.	Items required	Qty.	Rate quoted (each)	GST, if any
1	Semi-automatic biochemistry analyzer	1		
2	3 parts Haematology analyser	1		
3	Blood Gas analyser	1		
4.	Urine 10-15 parameters test strips (50 strips/pack)	10		
5	UV-Vis microplate spectrophotometer	1		
6	Double distilled water unit	1		
7	Ice flaking machine	1		
8	Mini spin centrifuge	1		
9	Vortex Mixer	1		
10	Shaking Water bath	1		
11	Magnetic stirrer hot plate with 2 magnetic beads	1		
12	Variable volume pipette T2, 0.5-2 ul, Autoclavable	1		
13	Variable volume pipette T20, 2-20 ul, Autoclavable	1		
14	Variable volume pipette T200, 20-200ul, Autoclavable	1		
15	Variable volume pipette T1000, 100-1000ul	1		
16	8 Channel variable volume pipette, 50-300ul	1		
17	Benchtop refrigerated centrifuge with 2 fixed angle rotors (10-20 x15ml, 20x2ml) & suitable voltage stabilizer	1		
18	pH meter	1		
19	Refrigerator (4-10 degree celcius) 200 ltrs	1		
20	Deep freezer (-20 degree celcius) 100 ltrs	1		
21	**Laboratory Chemicals**			
	Acetic acid powder Analytical grade	500 gm		
	Silica Gel Powder with calcium sulphate ($CaSO_4 \cdot \frac{1}{2} H_2O$) for Thin layer chromatography	500 gm		
	Glycine, amino acid	100 gm		
	Tyrosine , amino acid	100 gm		
	Leucine, amino acid	100 gm		
	Aspartic acid, amino acid	100 gm		
	Ferric Chloride solution	500 ml		
	Ninhydrin powder	250 gm		
	Sodium pyruvate	500 gm		
	Aspartic acid	500 gm		
	Potassium Dihydrogen phosphate	50 gm		
	Alanine	500 gm		
	Sodium bicarbonate	500 gm		
	Sodium carbonate	500 gm		
	Anhydrous Sodium carbonate	500 gm		
	Disodium Phenylphosphate	100 gm		

Financial Bids
Instruments to be procured for Biochemistry Laboratory

Sl. No.	Items required	Qty.	Rate quoted (each)	GST, if any
	Sulphuric acid	500 ml		
	Potassium ferricyanide	250 gm		
	Amino antipyrine	250 gm		
	Alpha ketoglutaric acid	100 gm		
	Barium hydroxide	250 gm		
	Zinc sulphate	1 gm		
	Folin & Ciocalteu's phenol reagent	500 ml		
	Rochelle salt	500 gm		
	Copper sulphate	50 gm		
	Ammonium molybdate	100 gm		
	Pure dextrose	500 gm		
	Soluble starch	100 gm		
	Potassium iodide	100 gm		
	Potassium hydroxide (KOH)	200 gm		
	Benzoic acid	500 gm		
	Ferric chloride solution	1 ltr		
	Dry cholesterol	25 gm		
	Barium hydroxide	250 gm		
	Phenophathelin indicator	500 gm		
	Phosphoric acid	500 ml		
	Diacetyl monoxime	500 mg		
	(2,2'-azino-bis(3-ethylbenzothiazoline-6-sulphonic acid) ABTS powder	5 gm		
	(6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxylic acid) Trolox powder	5 gm		
	Salivary cortisol kit (96 test)	4 kit		
	Bradford reagent	500 ml		
	Bovine serum albumin lyophilized powder	100 gm		
	Ethanol (500 ml/bottle)	4 bottles		
	Methanol	500 ml		
	Isopropanol	500 ml		
	Propan-2-ol	500 ml		
	Ammonia solution	200 ml		
	DMSO	500 ml		
	Diethyl ether	500 ml		
	pyridine sulphate di-bromide	500 ml		
	Chloroform	500 ml		
	Sodium thio-sulfate	500 gm		
	Kerosene/fuel for Bunsen burner	500 ml		
	Ultra pure (double distilled) laboratory grade water	20 ltrs		

Financial Bids
Instruments to be procured for Biochemistry Laboratory

Sl. No.	Items required	Qty.	Rate quoted (each)	GST, if any
21	**Laboratory plasticware and glassware**			
	Test Tube Holder (for student)	15		
	Bunsen Burner	10		
	Borosilicate glass test tubes (15 ml)	100		
	Thin Liquid Chromatography plates (Glass backed, Plain Silica gel60) 5x10 cm	100		
	Volumetric glass Burette (25 ml) with bottom opening stopclock	10		
	Burette stand with clamp	10		
	Buchner funnel	10		
	Volumetric flask	20		
	Chromatography paper sheet (10 Wx 30 L)100 sheets	1 pack		
	Glass Beakers (500 ml) (6 per pack)	2 pack		
	Polypropylene Measuring Cylinder (500 ml)	15		
	Glass rods	15		
	Vacutainers (sodium edta)	200		
	Vacutainer (grey, sodium fluoride)	200		
	Vacutainers (red)	200		
	Urine/sputum collection tubes Polypropylene, plastic cap, 10-30 ml capacity, sterile	300		
	96 well plates , flat bottom, transparent, with lid, for biochemical assays	300		
	Universal pipette tips, MicroTips 200-1000ul, Medical grade virgin polypropylene, Autoclavable, Sterile, Dnase, Rnase,Pyrogen Free, 500 tips/pack	1000		
	Universal pipette tips, MicroTips 10 ul, Medical grade virgin polypropylene, Autoclavable, Sterile, Dnase, Rnase,Pyrogen Free, 1000 tips/pack	1000		
	Microcentrifuge tube, Capacity – 1.5 ml Colour of Tube - Transparent or Clear, Type of Cap - Snap Cap, Overall Tube Length - 40 mm, Autoclavable, Tubes stay sealed during boiling, freezing or centrifuging, and are still easy to open afterwards, pack size – 500 tubes/pack	1000		
	Spatula for weighing of dry powders, stainless steel, maximum capacity- 1gm	1		
	pH Strips (6-8 range) 10/pack	1 pack		
	Empty Tip box with cover (for 1000 ul tip), polypropylene	2		
	Empty Tip box with cover (10 ul tip), polypropylene	2		
	Wash bottle , capacity 250 ml	10		
22.	Accessories for equipments (UPS, Stabilizers etc.)			

Annexure-'C'

Check list for submission of Technical Bid

Sl. No.	Particulars	Remarks/documents to be attached
1.	Name of the Agency	
2.	Address of Head Offices: Telephone: E-Mail Fax Number (if any): Name(s) of the contact person(s):	
3.	Self attested copy of PAN NUMBER	Page No.....
4.	Self attested copy of GST NUMBER	Page No.....
6.	Self attested copy of Audited Statement of Accounts/Form-16 for the 03 years 2015-16, 2016-17 and 2017-18.	Page No.....
7.	Details of Bid Security Fee: (Rs.1,66,000/-)	Page No.....
8.	Details of Tender Fee: (Rs.1,000/-)	Page No.....
9.	Enclosed terms and conditions duly signed and stamped by the agency, if accepted.	Page No.....

Signature with Seal