



**Department of Biotechnology  
North Orissa University, Takatpur, Baripada**

**No. NOU/BT/ 19(95)/2019      Date: 25.02.2019**

**TENDER CALL NOTICE**

Sealed tenders are invited from registered manufacturers/authorized dealers/ Order suppliers having valid GSTIN, Income Tax clearance, PAN Card for purchase and supply of Equipments, Networking & computational facilities and Books under **DST- FIST Programme** of the Department along with earnest money deposit(EMD) of RS. 5000/- or 1% ( whichever is higher) of the total cost of the equipment (refundable ) in the shape of DD .The details of the tender paper along with the terms and conditions shall be obtained on payment of RS.200/- (Non refundable) in the shape of DD from the HOD, Biotechnology during the office hours on all working days. All DD should be made in favour of HOD, Biotechnology, payable at Baripada. The Tender papers will be opened on 06.03.2019 at 2 PM and the tender will be open on the same day at 2:30PM.

The details of specification of items/ equipments are as follows:

## **A. EQUIPMENTS**

### **1. FLUORESCENT SPECTROPHOTOMETER**

#### **Specifications:**

- Control: PC Controlled
- Fluorescence Mode: Fluorescence, Luminescence (Chemiluminescence, Bioluminescence, Electroluminescence)
- Source: High Intensity 150w Xenon Lamp
- Optical: Double Continuous Spectroscopic Monochromator
- Fluorescent Intensity
- Wavelength Range: 200-900 nm
- Wavelength Accuracy:  $\pm 2.0$  nm
- Wavelength Repeatability:  $\pm 1.0$  nm
- Detector: Photo Multiplier Tube
- Spectral Bandwidth: Excitation: Selectable 1, 2.5, 5, 10, 20 nm
  - Emission: Selectable 1, 2.5, 5, 10, 20 nm
- Wavelength Scan Speed: 20,50,100-2000 nm/Min
- Scan Interval: 0.2 – 10.0 nm
- Sensitivity: Signal-To-Noise Ration 1200:1 RMS/15000:1 RMS(Bg)
- Linearity: 0.995 (Quinine Sulfate Solution)
- Baseline Drift: <0.3%
- Measurement Mode: Wavelength Scan, Time Scan, Quantitative, 3d Scan

- Temperature Controlled
- Fluorescence Polarization (240-740nm), Filter Based
- Temperature Control Up To 45 °c
- Compatible with Lvis Plate for Low Volume Measurement (DNA/RNA/Protein)
- Light Source: Xe Lamp with Shielded Lamp Housing, 150w
- Automatic Cut Filter

**Additional Features:**

1. **Features** Compability with microplate reader .
2. Versatile kinetic software features for endpoint, long term and fast kinetic measurements  
Real-Time kinetic monitoring.

**Optional:** Cost must be specified with and without optional features.

**2. UV-VIS SPECTROPHOTOMETER**

**Specifications:**

- Wavelength range :190 to 1100nm
- Wavelength resolution :0.1nm
- Wavelength accuracy :± 0.3nm (at 0.5 and 1nm bandwidth) ± 0.5nm  
(At 2, 4 and 5nm bandwidth) Wavelength reproducibility: ±0.2nm
- Spectral bandwidth Variable: 0.5, 1, 2, 4, 5nm
- Photometric range :−0.3 to 3.0A 0 to 200% T
- Photometric accuracy:± 0.002A (0-0.5A) ±0.3% T (0-100% T)
- Photometric reproducibility: ±0.001 Abs (0 to 0.5 Abs) ±0.002 Abs  
(0.5 to 1.0 Abs) 0.15%T (0-100%T) Resolution: 0.1%T, 0.001A Stray light
- Stray light :<0.05% T at 220 and 360nm
- Noise: 0.0005A
- Stability: ±0.001A/h at 500 nm after 15 min warm up
- Multi –wave length: up to 10 wavelengths ,up to 20 wavelengths with PC software
- Calculation: ratio, difference , formulae with factors
- Spectrum range: any range between 190 and 1100 nm
- Scan speed: 100 to 2000nm/min
- Scan interval: 0.1,0.2,0.5,1.2 or 5 nm
- Analysis: auto peaks and valleys ,zoom ,addition , subtraction ,peak ratios, smoothing ,area under curve, wave length table ,derivatives, overlay with pc software
- Kinetics: Up to 12 hours with time intervals of best fit between any two points.
- Analysis: Auto peaks and valleys, zoom, Addition, subtraction, peak ratios, smoothing, area under curve, wavelength table, derivatives, overlay with PC software
- Kinetics: Up to 12 hours with time intervals of 0.1, 0.2, 0.5, 1, 2, 5, 10 or 30 seconds
- Analysis : Slope and formula of line of best fit between any two points
- Quantization points : Up to 3 wavelengths
- Quantization Calibration : Blank with up to 10 standards or factor
- Concentration range: 0–99999
- Calibration : Blank with standards or factor
- DNA: DNA Ratio, concentration, A320 correction. Light source Tungsten halogen and Deuterium lamps Lamp changeover 325 to 370nm selectable
- Outputs USB and parallel
- Operating system: Windows 2000, XP, Vista, Windows 7

- Electrical supply 120VA, 220/110V, 50/60Hz
- Size (w x d x h) 600 x 450 x 200mm
- Weight 22kg
- Supported language: English
- Soft touch keypad with LCD display for standalone and PC operation
- Measurement for : Photometric spectrum scan qualification, time scan
- software for PC along with standard accessories
- i) 10mm path length cell holder
- ii) 10mm quartz cells
- iii) Power cable
- iv) USB connection cable:
- v) User Manual

### **3. ULTRASONIC PROBE SONICATOR**

#### **Specifications:**

- Real Time Display
- Independent On / Off Pulser, Integrated Temperature Controller, Variable Power Output Control, Real Time Automatic Tuning & Frequency Control, Consistent Reproducibility,
- (LCD Display)
- Power: 500 W, Frequency: 20 ± 3 KHz, Titanium Probe with tip: 3/8" included, Independent ON/OFF Pulser,
- Timer, Input supply: 230 VAC, Sample Volume: 10 ml to 600ml
- To be supplied with probe, stand, clamp and sound enclosure box

### **4. INVERTED MICROSCOPE**

#### **Specifications:**

- Trinocular microscope should be suitable for Bright field and Phase contrast, image analysis.
- The microscope should have automatic illumination shut off facility at least 15 minutes to increase the lamp life and longevity.
- Stand should have both side inbuilt live LED as intensity indicator.
- Rectangular stage with size 150(X) × 200 (Y) mm for petridishes, slides, microplate.
- The eyepiece tube should be trinocular with 45° inclination angle with 10x eyepieces of F.O.V. 20/22MM.
- Complete with bright field and phase contrast objective 10x ph, 20x ph, 40x ph.
- Complete with both 6V/30 watt halogen lamp with additional spares and should be compatible for white light LED illuminator for future upgradation.
- Condenser working distance of 72 mm with filter slider and phase slider preferably interference filter, blue filter, neutral density filter.
- Camera resolution should be 5.0 mp or more and frame rate should be 47 fps for fast moving image and exposure should be 100 micros to 4s and Pixel size should be 2.2µm X 2.2 µm along with 0.5x adapter.
- The instrument should have dust protection cover with coverglass cap.
- The instrument should be capable of image analysis software for measurements, text annotation, color adjustment, image processing and optimization.
- Standard desktop computer with minimum 1TB memory, 4GBRAM, i3 configuration.

- The Microscopes, Camera and imaging software must be from same manufacturer for best compatibility.

### **TERMS AND CONDITIONS FOR EQUIPMENTS:**

1. Due regard shall be given to the following factors in addition to the evaluated price of the material under consideration.
  - i. Efficiency and running cost
  - ii. Durability of material
  - iii. Reliability and guarantee of quality
  - iv. Necessity of repairs and alterations
  - v. Technical qualifications, financial standing and general reputations of the manufacturer/ supplier
2. Orders will be placed by us when required.
3. Delivery should be made within 3 weeks from the date of receiving the order failing which penalty @1% of the order will be imposed for each week of delay or part thereof.
4. The rate finalized by this tender shall remain valid ordinarily during the financial year. However North Orissa University reserves the right to go in form fresh tenders on the basis of the market condition.
5. Payment will be made after installation of the item.
6. Financial bids will be considered only after fulfilling the technical bids.
7. Free delivery at North Orissa University by the supplier.
8. Warranty for three years and annual maintenance cost after 3 years to be mentioned.
9. After sales service to be provided by the bidder.
10. Free Training/ Demonstration of the Equipments.
11. High quality/ branded Equipments are required for research purpose.

## **B. LIST OF BOOKS**

<b>S.No.</b>	<b>Book Title</b>	<b>Publisher</b>	<b>Authors</b>	<b>No. of Copies Required</b>
1	Introduction to Plant Biotech.	OXFORD-IBH	Chawla	1
2	Gene Cloning and DNA Analysis	Wiley	Brown	1
3	Biotechnology	Degruyter	Kuck	1
4	Genetics and Molecular Biology	MGH	Hyde	1
5	Cellular and Molecular Immunology	Elsevier	Abul Abbas Andrew H. Lichtman Shiv Pillai	1
6	Laboratory Manual of Microbiology And Biotechnology	MEDTECH	Aneja	1
7	Concept in Biotechnology	UP	Balasubramanian	1
8	Understanding Bioinformatics	GARLAND	Zvelebil	1
9	Introduction To Biostatistic And Research	MEDTECH	Rao	1
10	Bioinformatic	GARLAND	Hpodgman	1
11	Alcomo's Fundamental of Microbiology	J.B.	Pommerville	1
12	Laboratory Manual of Microbiology and Biotechnology	MEDTECH	Aneja	1
13	Biotchnoly A Labrotary Course	Elvs	Becker	1
14	Animal Cell Biotechnology	Humana	Jenkins	1
15	Immunology	Stanford	Kuby	1
16	Plant Tissue Culture	SBW	Prakash	1
17	The Biotechnology of Cell Signaling By Halmeria	Oxford	Helmreich	1
18	Industrial Biotechnology	Ane Pvt	Mathuriya	1
19	Analytical Biotechnology	Random	Alighieri	1
20	Principle and Techniques of	Random	Maddina	1
21	Lewin's Genes XI	J.B.	Krebbs	1
22	Biochemistry And Molecular Biology	Wiley	Buchanan	1
23	Plant Biotechnology	MEDTECH	Fasella	1
24	Bioinformatics Approaches and Applications HB	Biotech Books-Delhi	Chakraborty C	1
25	Biochemistry and Molecular Biology of Plants	I K International Pvt. Ltd-NE	Buchanan	1

26	Cell Biology, 6/E PB	John Wiley & Sons Inc.	Karp, Gerald	1
27	Plant Biotechnology 2/E PB	Oxford University Press-New D	Slater A	1
28	Bioinformatics Vol-4 PB	BSP Books Pvt. Ltd-Hyderabad	Ranoof	1
29	Introduction To Genetic Engineering 3/E PB	Cambridge University Press-NE	Nicholl D S T	1
30	Plant Biotechnology And Its Applications In Tissue Culture	I K International Pvt. Ltd-NE	Kumar, Ashwani	1
31	Environmental Biotechnology : Basic Concepts And Applications , 2/E PB	I K International Pvt. Ltd-NE	Thakur Indu Shek	1
32	Biotechniques HB	MJP Publishers-Chennai	Ponmurugan	1
33	Environmental Biotechnology,2E	Oxford University Press-New Delhi	SCRAGG	1
34	Introduction To Biostatistics, 3e PB	S Chand & Company-New Delhi	Banerjee P K	1
35	Industrial Biotechnology (HB)	Sonali Publications-New Delhi	Kaladhar D	1
36	Biostatistics : A Bayesian Introduction PB	Wiley India Pvt. Ltd.-New Delh	Woodworth	1
37	Textbook Of Molecular Biology PB	Macmillan India Ltd-New Delhi	Sastry	1
38	Environmental Biotechnology	McGRAW-Hill Education India P	Rittmann	1
39	Genetic Engineering, 1/E PB	Oxford University Press-New Delhi	Rastogi, Smita	1

#### **TERMS AND CONDITIONS FOR BOOKS:**

1. More than one bidder may be selected for books on the basis of highest discount offered which shall constitute a panel of supplier.
2. The maximum discount the vendor concerned intends to offer shall be mentioned clearly. The bidder has to mention clearly the flat discount in both words and figure.
3. The discount is on printed price / catalogue price as applicable.
4. The discount offered should match in figure and words. In case of any deviation between figure and words, the offer in respect of that particular publication may be invalid.
5. In case of foreign publications, the rate of conversion of foreign currencies to Indian currency shall be according to GOC rate.
6. If the foreign published books have Indian prints / publication, the supplier has to supply the books of Indian prints.

7. For the foreign published books, the supplier has to give the certificate / undertaking that the books have no Indian prints / publication.
8. Where the printed price of books is not available, the supplier has to produce the publisher's catalogue / original invoice of the publisher for the verification of the cost of the books.
9. The selected supplier will deliver the books directly to the HOD Biotechnology, NOU, Baripada Campus, with intimation along with copy of the bill. The cost of packing, forwarding including delivery of books shall be borne by the supplier.
10. Bills in triplicate are required to be furnished with the books during the time of supply.
11. The latest edition / printing of books shall be supplied. All the books of same title should have the same year of printing. Variation in the year of printing will not be accepted.
12. The supplier has to supply all the books placed in the purchase order preferably in one lot. For the non supply of books, the supplier has to furnish the certificate from the publisher concerned regarding the non-availability / out of print status of such books.
13. For non-supply of books as per order, term and conditions the EMD of the said firm shall be forfeited and order for purchase will stand cancelled.
14. Old and defective books if found at any stage even after the stock entry and stamping will have to be replaced by the supplier at his own cost failing which the party may be debarred to participate in the purchase of books in the coming years.
15. Books are to be supplied within 15 days from the date of issue of purchase order.
16. The payment will be made after completion of all formalities as soon as possible.
17. The EMD will be refunded after completion of the stock entry.

## **C. COMPUTATIONAL FACILITIES**

**1. Desktop Computers:** 4GB RAM, Intel Celeron dual core Processor, 1TB HDD, Keyboard, Mouse, 18.5" Monitor.

**2. Server:** Intel Xeon E3-1225 v5 Processor (3.35GHz./8MB/80W), 8GB RAM, TB Hard Disk, Raid Built-in, DVD writer, Power supply in-built (290W), 18.5" LED Monitor, Keyboard and Mouse.

**3. UPS Online with Battery:** Capacity: 5KVA, Input: Single Phase 160-260V AC sine wave 50 Hz. Output: Single phase 230V  $\pm$ 1% AC sine wave 50Hz.

Overload time. $\geq$  10min backup time: 60min at full load

Voltage regulation from no load to full load less than equal to 3% Accessories: Movable trolley for batteries wire, cables etc.

**4. LAN connectivity:**

a. D- Link 24port Switch-01 No., D- Link 6U Rack-01No., D-Link CAT6 I/O box-15 Nos., D-Link 2Mtrs Patch cord-15Nos., D- Link CAT6 UTP cable.

**5. Printer:** Laser printer

**6. Furniture:**

Table and Chair for 15 nos. of Desktop Computers.

### **TERMS AND CONDITIONS FOR COMPUTATIONAL FACILITIES:**

1. Three years warranty and annual maintenance cost their after to be mentioned on all items.
2. Payment will be made after successful installation with demonstration.
3. Free delivery and installation with demonstration of all items within 3 weeks from the date of receiving the order at North Orissa University.

Sd/-

**HOD, Department of Biotechnology**