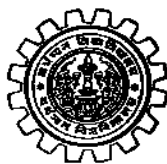


Dr. Tushar Kanti Maiti
PROFESSOR
UGC CENTRE FOR ADVANCE STUDIES
DEPARTMENT OF BOTANY
THE UNIVERSITY OF BURDWAN



THE UNIVERSITY OF BURDWAN
Burdwan, West Bengal, India-713104
Phone: (0342) 2659493 @,
Mobile-09434167047
Fax: (+91) 0342 2564452
Email: tkmbu@yahoo.co.in

Ref. No. CSIR/TKM/01

Date- 07.01.19

TENDER NOTICE

Sealed quotations are hereby invited from the authorized for supplying the following Instruments and chemicals, glass wares etc. for CSIR sponsored Research Project, Govt of India, under **Professor Tushar Kanti Maiti** (PI), *vide sanction letter 381469/18/EMR-I, dt.04.04.18*. Authorized parties are hereby requested to submit their quotations including the current Trade License, GST registration certificate, Service Tax Registration Certificate, PAN No., Copy of Registration Certificate with Statutory Authorities and other credentials **within 15 days** from the publication of this notice in a sealed envelope addressed to the undersigned. The University is not bound to accept the lowest rate over technical superiority and reserves the right to cancel any item/quote or all the quotations without assigning any reasons thereof. The offer price for every item must including GST mentioning GST % separately.

(Tushar Kanti Maiti)
Department of Botany
Burdwan University
Burdwan

Technical Specifications of Instruments

1. *Plant growth chamber*
2. *Bacteriological Incubator Shaker*
3. *Digital Water bath:*
4. *PCS Water proof Multi-parameter Tester (PCS Testr 35 Series)*

1. Plant growth chamber

Specifications:

- Must be comprising of double wall construction with inner chamber made of stainless steel 304 quality and outside of rustproof CRCA steel duly powder coated.
- Temperature range should be essentially between 5°C to 60°C ± 0.1°C.
- Humidity range should be 40% to 95% ± 1%. Humidity creation should be through sophisticated steam injection process.
- Regulation and controlling should be with Menu driven Keypad controlled, Programmable Microprocessor based PID temperature indicator cum controller with segment programming with temp, humidity and illumination all three parameter individual control.
- Should be provided with appropriate display (16 x 2 Jumbo, LCD touch screen / feather touch) with Digital display of all parameter.
- Controller should be equipped with inbuilt date recording facility and PC connectivity. 7. The machine should be enabled for Automatic calibration of set parameters & Self-Diagnosis for errors.
- Must have audio visual Alarm output on any kind of deviation in any set parameter.
- The machine must be associated with in-built safety circuit for high temperature protection and low water level protection, which cuts off system and stops unit in case of malfunction of microprocessor.
- The instrument should be associated with transparent double layer tempered safety glass window for sample observation during work without opening the door.
- Working chamber should be illuminated by 6 no. florescent lamp with timer for day and night mode operation.
- Capacity of the instrument should be approximately 250 lit.
- The instrument must be supplied with 2 no. SS trays.
- The offer should include two yeas complete warrantee and voltage stabilizer.
- The manufacturer either has ISO certified company or sufficient/satisfactory installation report for the same item various Govt. recognized labs. in India, The manufacturer must have a strong service setup in Kolkata and adjoining areas.
- The quotation should include recent installation report from well-known research laboratories/Institutions.
- After sale, free installation and demo service should be available promptly.
- Additional USER & ECO Friendly specifications
- Hermitically sealed compressor with CFC free refrigerant.

- User friendly unique design of thermal barrier for better energy efficiency.
- Menu driven Keypad controlled
- SSR based Heater, Compressor, Humidifier and De-Humidifier output control at time interval.
- Alarm output on any kind of deviation in any parameters when value exceeds the normal Set point.
- Data Logger for Multi Data logging system
- PC Communication: RS232.
- **At least one UV lamp should be fitted inside for sterilization of the chamber.**
- Required Safety Features:
 - Water Level Detection
 - Internal safety thermostat provided for overheating.
 - Electrical Circuit Breaker
 - Overload cut off relay for compressor.
 - One min. time delay for compressor switches on.
 - Fan timer controlled
 - Noise level less than 65 db.
 - Door key lock.
 - Included voltage stabilizer (desirable), Voltage stabilizer must be compatible with this instrument (cost of voltage stabilizer should be mentioned separately)
- **User list must be provided**

2. BOD Incubator Shaker

Specifications:

- Bacteriological Incubator with Shaker, Triple walled construction, inner working chamber of 304 Quality Stainless Steel Sheet, outer and middle chambers made with mild steel sheet with epoxy powder
- Adequate coating paints.
- Size: 20" x 20" x 24", with shaking Platform Size: 24 x 20" **No. of Flasks Capacity 30 nos. x 100/250ml.**
- Insulation in between the two outer walls with non –hygroscopic glass wool. Double door provided with inner glass and outer insulated double walled sheet.
- Temperature requirement: From few degrees above room ambient to 70°C.
- Precise controlled temperature system with PID Digital Temperature Indicator Cum controller with PT-100 Sensor.
- Temperature range should be essentially between 5°C to 60°C ± 0.1°C.
- Maintenance of accuracy of temperature of ± 1°C, with Blower arrangement for maintaining temperature uniformity.
- Variable shaking speed of 20 to 250 r.p.m. and speed controlled by “AE” auto variack along with Digital Speed Meter (RPM) Counter with display connected to electronic circuit with ± 3/5 Digit Accuracy.
- Continuous shaking at any set RPM for 4 – 5 days.
- Shaker will be restart at present speed in case of power failure.

- The control panel must be consisting of switches indicating lamp, digital controller, voltmeter etc. externally mounted at easy level. A built in a CFL Lamp should be provided for working in the chamber.
- Must be equipped with thick ball punching perforated (1No.) Stainless steel pushpull trays.
- The Shaker part should be fitted on the bottom of the Incubator.
- Heavy duty DC Motor of suitable capacities must be provided for long duration operation.
- The motor must be coupled by means of a V-Belt with pitch pulley and mounted on a heavy and sturdy angle iron frame.
- The instrument must be operated electrically on 220/230 volts, single Phase, Ac mains.
- **At least one UV lamp should be fitted inside for sterilization of the chamber.**
- **Comprehensive warranty for a minimum of two years**
- After sale, free installation and demo service should be available promptly.
- The manufacturer either has ISO certified company or sufficient/satisfactory installation report for the same item various Govt. recognized labs. in India, The manufacturer must have a strong service setup in Kolkata and adjoining areas.
- **User list must be provided**
- The offer should include two years complete warranty and voltage stabilizer.
- Included voltage stabilizer (desirable). Voltage stabilizer must be compatible with this instrument(cost of voltage stabilizer should be mentioned separately)

3. Digital Water bath:

Specifications:

- Tank : High grade stainless steel storage tank
- Capacity : 5 – 8 litres
- Temperature range : Ambient to 99°C
- Temperature accuracy : $\pm 0.02^{\circ}\text{C}$
- Temperature control : Digital proportional–integral–derivative (PID) control
- Timer : 0.1 Hour to 99.9 Hours & continuous
- Safety protection : User settable and fixed thermal cut-out
- Display : Digital real-time display of temperature
- Alarm : Low level water alarm, safety shut down audible/visual alarm
- Operating voltage: 230 \pm 10VAC, 50 Hz.
- Tank design for easy cleaning and draining
- Steel holder for tubes (1.5/2 ml, 5ml, 15 ml) and Flasks (50, 100 & 250 ml)
- Comprehensive warranty for a minimum of two years
- After sale, free installation and demo service should be available promptly.
- **User list must be provided**

4. PCS Water proof Multi-parameter Tester (PCS Testr 35 Series)

Specifications		PCSTestr 35	PCTestr 35	PTTestr 35
pH	Range	0.00 to 14.00 pH	0.0 to 14.0 pH	0.0 to 14.0 pH
	Resolution	0.01 pH	0.1 pH	0.1 pH
	Accuracy	0.01 pH	0.1 pH	0.1 pH
	Cal. Points	Up to 5 (auto)	Up to 5 (auto)	Up to 5 (auto)
	Auto-Buffer Recognition	Yes	Yes	Yes
Cond.	Range	0.0 to 199.9 μ S/cm 200 to 1999 μ S/cm 2.00 to 20.00 mS/cm	0 to 1999 μ S/cm 2.00 to 20.00 mS/cm	–
	Resolution	0.1 μ S/cm / 1 μ S/cm 0.01 mS/cm	1 μ S/cm / 0.01 mS/cm	–
	Accuracy	\pm 1 % full scale	\pm 1 % full scale	–
	Cal. Points	3 auto, 3 manual	2 auto, 2 manual	–
	Temperature Coefficient	0.0 to 10.0 %/ $^{\circ}$ C	0.0 to 10.0 %/ $^{\circ}$ C	0.0 to 10.0 %/ $^{\circ}$ C
	Normalisation Temperature	25.0 $^{\circ}$ C	25.0 $^{\circ}$ C	25.0 $^{\circ}$ C
	Auto-Ranging	Yes	Yes	Yes
TDS	Range	0.0 to 99.9 ppm 100 to 999 ppm 1.00 to 10.00 ppt	–	0 to 999 ppm / 1.00 to 10.00 ppt
	Resolution	0.1 ppm / 1 ppm / 0.01 ppt	–	1 ppm / 0.01 ppt
	Accuracy	\pm 1 % full scale	–	\pm 1 % full scale
	Cal. Points	Up to 3 (manual)	–	Up to 2 (manual)
	TDS Factor	0.40 to 1.00	–	0.40 to 1.00
Salinity	Range	0.0 to 99.9 ppm 100 to 999 ppm 1.00 to 10.00 ppt 0.0 to 1.00 ‰	–	–
	Resolution	0.1 ppm / 1 ppm 0.01 ppt / 0.01 ‰	–	–
	Accuracy	\pm 1 % full scale	–	–
	Cal. Points	Up to 3 (manual)	–	–
Temp.	Range	0 to 50.0 $^{\circ}$ C / 32 to 122.0 $^{\circ}$ F		
	Resolution	0.1 $^{\circ}$ C / 0.1 $^{\circ}$ F		
	Accuracy	0.5 $^{\circ}$ C / 0.9 $^{\circ}$ F		
Temp. Compensation	ATC / MTC			
Sensor Type	pH / Conductivity / TDS / Salinity / Temperature			
Non-Volatile Memory	Yes			
Auto-Off	8.5 mins after last key pressed (can be disabled)			
LCD Display	Dual-display LCD (2.1 x 2.7 cm)			
Power	4 x 1.5 V "A76" micro alkaline batteries			
Battery Life	> 150 hrs			
Dimensions ; Weight	Tester: 16.5 cm x 3.8 cm ; 90 g Boxed: 18.5 cm x 6.5 cm x 5 cm ; 200 g			

- Comprehensive warranty for a minimum of two years.
- User list must be provided

CHEMICAL LIST FOR CSIR PROJECT

CHEMICAL

Sl. No	CHEMICAL	QUANTITY	MANUFACTURER	CATALOUGE NO
1.	Potassium persulfate	5 g×1	SIGMA	216224
2.	Nutrient Agar No. 2	500 g ×1	HIMEDIA	M 1269
3.	Pikovskaya's Agar	500 g ×1	HIMEDIA	M 520
4.	Ashby's Mannitol Agar	500 g ×1	HIMEDIA	M 706
5.	Commase brilliant blue (G 250)	25g×1	SIGMA	27815
6.	Piperazine-N-N'-bis 2-ethanosulfonic acid (PIPES Buffer)	100g×1	HIMEDIA	RM659
7.	Ammonium Molybdate	100g×1	HIMEDIA	GRM307
8.	Casamino Acid	114g×1	Difco Laboratory	DIFCO228820
9.	Starch (Soluble)	100g×1	HIMEDIA	RM3029
10.	DNA	5g×1	HIMEDIA	RM511
11.	Aminopeptidase Strip	50 strips in Fibre case	Sigma	1133010001
12.	Flavin adenine dinucleotide(FAD)	10mg×1	HIMEDIA	F6625
13.	2-Thiobarbituric acid	100g×1	HIMEDIA	T5500
14.	2'7'-dichlorofluoresceindiacetate (DCFDA),	100mg×1	SIGMA	287810
15.	Titanous Sulphate Ti(SO ₄) ₂	500ml	HIMEDIA	RM5474
16.	Sodium Diethyldithiocarbamate	100G	SIGMA	228680
17.	2,2'-diphenyl-1-picrylhydrazyl (DPPH)	1G	SIGMA	D9132

18.	2,4,6-tripyridyl-s-trizine (TPTZ)	5g	SIGMA	T1253
19.	2,2'-azinobis 3 ethyl benzthiazoline-6-sulfonic acid (ABTS)	1G (SKU-Pack Size)	Sigma-Aldrich	A1888-1G
20.	Potassium persulfate	5g	SIGMA	379824
21.	Trolox	5g	SIGMA	238813
22.	Nitroblue tetrazolium Chloride (NBT)	10TAB	SIGMA	N6639
23.	NADPH	100mg	HIMEDIA	RM576
24.	Oxidised Glutathione (GSSG)	500MG	Sigma-Aldrich	G4376
25.	Glutathione Reductase(GR)	5mg	SIGMA	10105678001
26.	Phenyl Methyl Sulfonyl Fluoride (PMSF)	(SKU-Pack Size)	Sigma-Aldrich	10837091001
27.	Dithithreitol (DDT)	25g	SRL	46220
28.	Leupeptin	5mg	SIGMA	L2884
29.	Aprotinin	10mg	SIGMA	A3428
30.	Antipain	5mg	SIGMA	10791
31.	DNPH	-	SIGMA	442434
32.	3,5,3'5' tetramethylbenzidine(TMB)	1 G	SIGMA	860336
33.	Guanidine hydrochloride	100ML	SIGMA	G7294
34.	1% Poly vinyl polypyrillidone(PVPP)	1G	SIGMA	773417
35.	P-Chloromercuribenzolate	Lowest sized pack	Sigma-Aldrich	-
36.	Beef Extract Powder Type-1	500 g ×1	HIMEDIA	RM 669

37.	Sodium di-Hydrogen phosphate, anhydrous (NaH ₂ PO ₄)	250 g ×1	SIGMA ALDRICH	1065590500
38.	Aniline	250 g ×1	HIMEDIA	AS030
39.	1-Aminicyclopropane 1-carboxylic acid (ACC)	250 mg ×1	SIGMA ALDRICH	A3903
40.	ChromAzuroLS (CAS)	10g×1	HIMEDIA	RM 336
41.	Riboflavin	5g	SIGMA	R4500-5G
42.	EDTA	100g	SIGMA	798681
43.	2,4-Dinitrophenylhydrazine	100G	SIGMA	D199303
44.	Trichloroacetic acid (TCA)	500G	HIMEDIA	GRM7570
45.	Ethyl acetate	100ML	SIGMA	270989
46.	Diluent for DNA extraction	500ML×2	HIMEDIA	MB228
47.	Methanol	1 L	SIGMA	34860
48.	Magnesium chloride (MgCl ₂)	100G	SIGMA	M8266
49.	Sodium carbonate (Na ₂ CO ₃)	500G	SIGMA	S7795
50.	N-ethylmaleimide	5G	SIGMA	E3876
51.	Orthophosphoric acid		SIGMA	W290017
52.	α-α'-bipyridyl	10G	SIGMA	D216305
53.	5,5'-Dithiobis(2-nitrobenzoic acid) (DTNB)		SIGMA	D8130
54.	Guanidium isothiocyanate-phenol based reagent (RNA-XPress™ reagent, HiMedia)	100 ml 100ml	HIMEDIA	MB601-100ML MB601-5X100ML
55.	Revert Aid First Strand cDNA synthesis kit (Fermentas, Thermo Scientific)	Lowest sized pack	Thermo Scientific	K1622
56.	Aminoethoxyvinylglycine (AVG)	Lowest sized pack	Sigma-Aldrich	359629
57.	Sodium Chloride	500 G	HIMEDIA	MB023
58.	Linoleic acid	10 MG	SIGMA	L1376
59.	Bistrispropane	25G	SIGMA	B6755
60.	Gramicidin	100MG	SIGMA	G5002
61.	Sodium Molybdate	100G	SIGMA	331058

62.	ATP	1G	SIGMA	A2383
63.	Sodium orthovanadate	10G	SIGMA	450243
64.	Sodium bisulfite	1L	SIGMA	13438
65.	Maleic acid	100G	SIGMA	M0375
66.	p-methyl amino phenol sulphate	500G	Sigma-Aldrich	320013
67.	Metaphosphoric acid	5G	SIGMA	239275
68.	TTC	10G	HIMEDIA	MB188
69.	Glutathione (GSH)	5 GM	HIMEDIA	PCT0309

II. GLASS WARES

Sl. No.	ITEM	COMPANY	QUANTITY	CATALOUGE NO
1.	Culture tube	Borosil	27mlx100pcs (18x150mm)	9800U06
			55mlx25pcs (25x150mm)	9800U08
2.	Erlenmeyer flask, conical, narrow mouth	Borosil	25mlx10(1 pack)	4980009
			50mlx20pcs	4980012
			100mlx20(6 pack)	4989016
			250mlx10	4980021
			500mlx10	4980024
3.	Beaker	Riviera	1000mlx4	4980029
			50mlx10(1 pack)	7010017
			100mlx10(1 pack)	7010024
			250mlx10(1 pack)	7010036
			500mlx6(1 pack)	7010044
			1000mlx6(1 pack)	7010054

4.	Measuring cylinder	Riviera	10mlx2	7070060
			25mlx2	7070070
			50mlx2	7070075
			100mlx2	7070080
			250mlx2	7070086
			500mlx2	7070090
5.	Petri dishes	Borosil	I pack of 100 pcs(50 x 12mm)	3165065
6.	Reagent bottles	Riviera	250ml x5	7020036
7.	Desiccators, plain, clear glass	Riviera	1 pcs	7430057
8.	Flask, round bottom, narrow neck	Riviera	25mlx10	7400014
			50mlx10	7400017
			100mlx10	7400024
9.	Flask, volumetric, with interchangeable glass stopper	Borosil	10mlx2	5640006
			50mlx2	5640012
			100mlx2pcs	5640016
			200mlx2pcs	5640020
10.	Culture tubes, Media, Round Bottom, with PP Screw Cap and Liner	Borosil	30ml x25pcs	9900010
			5ml x20pcs	9900005
11.	Measuring Cylinders, Graduated, Single Metric Scale, with Pour Out, with Hexagonal Base	Borosil	5ml x2	3021005
			100ml x2	3021016
12.	Funnels, Plain, Angle, Short Stem	Borosil	Diam35 mm x2	6140058
			Diam65 mm x2	6140069
13.	Water Distillation unit, all glass, with heater and in built cut off system with	Riviera	1 unit	7221115

	reset button horizontal type, made from heat resistant , low expansion borosilicate glass			
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III. MISCELLANEOUS

1..	pH indicator Paper 1-10	MERCK	4 Roll	10952600011730
2.	Micro Centrifuge tube (1.5ml capacity)	Tarsons	1 box×500pcs	500010
3.	Micropipette (100-1000µl) variable	Riviera	1 pcs	7730006
4.	Micropipette (10-100µl) variable	Riviera	1 pcs	7730005
5.	Micropipette (0.5-10µl) variable	Riviera	1 pcs	7730001
6.	Syringe Filters, Nylon-66 Membrane with Microglassfiber Prefilters, 0.2 µm (1182G16)	Thomas Scientific	1 pack of 100 pcs	SYGN0301MNXX104
7.	Micro Tip (100-1000µl capacity)	Riviera	1 pack each of 500pcs	77400003
	Micro Tip (0.5-200µl)		1 pack each of 1000pcs	77400002
	Micro Tip (0.5-20µl capacity)		1 pack each of 1000pcs	77400001
8.	Nitrile gloves	Tarsons	1 pack	370050
9.	Syringe filter (Size 25mm) (Autoclaveable)	Tarsons	1 pack of 2 pcs	521090