



GOVERNMENT OF WEST BENGAL  
Office of the Principal, Jhargram Raj College  
JHARGRAM:: 721507

Tender Notice

No. 46/Q-2

Date: 10.01.2020

Sealed Tender are invited from reputed and bonafide suppliers/dealers/agencies for purchase /installation/ Repairing & Maintenance (AMC) of different items as noted below for financial year 2019-2020. Please submit quotations separately for Category - I & Category - II.

**Category- I (New Articles)**  
**Chemistry**  
**Equipments**

SL. NO.	ITEM	DESCRIPTION
1	Balance Electrical Digital	Winser (1mg-200 mg)
2	Air Oven (Hot)	18x18x24 (SS Digital)
3	Electrical Water Bath	6 hole
4	Micro-pipette (1ml & 10 ml)	Tarson
5	Polarimeter	Any Reputed Company
6	UV-spectrophotometer	Eylla (Japan)
7	Electrode (Silver)	Systronics
8	Electrode (Platinum)	Systronics
9	Electrode (Glass)	Systronics
10	Electrode (Calomel)	Systronics
11	pH meter	Systronics
12	Conductometer	Systronics
13	Potentiometer	Systronics
14	Magnetic stirrer	Remi (2MLH)
15	Magnetic Bar	Any Reputed Company
16	Oil bath set-up	Demonstrate (AE) 8amp
17	Water Container	(Carboy-10 Lit.)
18	Steel Distillation Set	EI, 4 litres/hour capacity
19	Thermostatic Water bath	6 holes
20	External Hard Disk	1 TB, Seagate/Western Digital
21	Pen Drive	32 GB, HP/Sandisk
22	Heating Mantle	Any Reputed Company
23	Rotary Evaporator (Bucchi)	DO
24	Magnetic Stirrer Cum Heating	DO
25	Hot Plate	DO
26	Melting Point Apparatus	DO
27	Magnetic Stirrer	DO



## Botany Equipments

1. Compound Microscope, Zeiss/Olympus;
2. Digital UV-Vis Spectrophotometer, Systronics;
3. Digital Cold Centrifuge, Remi/Other;
4. BOD Incubator (300 Ltr.), Remi/Other;
5. Color Scanner, EPSON;
6. Trinocular Digital Microscope, Leitz/Zeiss/Olympus;
7. TLC Complete Set;
8. DSLR Camera (28-300 mm) Sony/Canon/Nikon;
9. Microtome;
10. Slide Storage Rack (Wooden/Metal);
11. Chemicals (AR/MB) (Sigma/Merck/SRL);
12. Overhead Projector Photofone/Others;
13. Digital Projector, Sony/Others;
14. Tubular Battery, Exide 19 Plates/21Plates;
15. Vacuum cleaner, Eureka Forbes;
16. Refrigerator 300 L. LG/Samsung/Others;
17. Memory Cards for Cannon Power Shot Camera;
18. Memory Cards for Sony HandiCam;

## Zoology Equipments

Serial No.	Name	Specification
1	Binocular Microscope	Radical RSM 2 with 10 x eye piece each
2	Refrigerator	Single door, Kelvinator/ LG/Samsung/ Haier/Godrej make, 175 L to 200 L
3	Plankton Net	Bolting silk material, mesh size 25 to 75µm
4	Plankton counting cell	Biosco or other make
5	Insect net	
6	Haemoglobinometer	Sahli's/ SSU
7	Haemocytometer	Neubaur
8	Microscope	Magnus HSA
9	Dali's apartus	
10	Ocular micrometer	Erma Preferable
11	Stage micrometer	Erma Preferable
12	Colorimeter	Systronics 112
13	Vortex	REMI
14	Tissue homogenizer (hand)	Omni or other make
15	Micro homogeniser	
16	Atomic Absorption Spectrometer	Hitachi Z 8100
17	GPS	GF 07/ UBLOX NEO -6M / AMUSING preferable
18	Air sampler for air pollution	AKAI / VHVS 5BL or equivalent

## Physiology Equipments

Serial No.	Name	Specification
1	Perimeter	Any Reputed Company
2	UV Visible spectroscopy	Any Reputed Company



## Chemicals & Glass goods

**Required rate (% of discount in different Chemicals & Glassware) for all Science Departments  
offered by different companies including all charges**

**(GST, delivery charge etc.)**

Cellfrost	Chemicals (LR/GR/AR) must be mentioned
E. Merck (Germany)	
E. Merck (India)	
Fischer	
Genei	
Hi-Media	
Nice	
Promega	
Qualigen	
Ranchem	
S.D. Fine Chemicals	
Spectrochem	
Sigma	
Sigma Aldrich	
SRL	
SRL India	
Blue star	Glassware
Borosil	
Corning	
Duran	
E. Merck (India)	
Polylab (plasticware)	
Ranchem	
Tarson (plasticware)	

## Chemistry Chemicals & Glass goods

Sl. No.	Chemical Name
1	Sodium Bi-sulphite ( $\text{NaHSO}_3$ )
2	Sodium Nitrate( $\text{NaNO}_3$ )
3	Sodium Nitrite( $\text{NaNO}_2$ )
4	Sodium Fluoride ( $\text{NaF}$ )
5	Calcium Chloride ( $\text{CaCl}_2$ )
6	Ammonium Bi-fluoride ( $\text{NH}_4\text{HF}_2$ )
7	Ammonium Chloride ( $\text{NH}_4\text{Cl}$ )
8	Ammonium Thiocyanate( $\text{NH}_4\text{SCN}$ )
9	Ammonium Dichromate [ $(\text{NH}_4)_2\text{Cr}_2\text{O}_7$ ]
10	EAA
11	Potassium Iodide (KI)
12	Potassium Permanganate ( $\text{KMnO}_4$ )
13	Ferrous Sulphide ( $\text{FeS}$ )
14	Sodium Carbonate ( $\text{NaCO}_3$ )
15	Sodium Bi-carbonate ( $\text{NaHCO}_3$ )
16	Sodium Hydroxide ( $\text{NaOH}$ )
17	Hydrochloric Acid ( $\text{HCl}$ )
18	Sulphuric Acid ( $\text{H}_2\text{SO}_4$ )



19	Ammonia (NH <sub>3</sub> )
20	Sulphur Powder (S)
21	Semi-Carbazide Hydrochloride
22	Yellow Ammonium Sulphide (NH <sub>4</sub> ) <sub>2</sub> S sol.
23	Chlorine Water
24	Phenyl Acetic Acid
25	o-Nitro Benzoic Acid
26	Oxalic Acid
27	Methyl Salicylic Acid
28	Benzoin
29	Anisic Acid
30	m-Nitro Benzaldehyde
31	p-Anisidine
32	Ethyl Acetoacetate
33	Methyl Acetate
34	Salicylaldehyde
35	Cinnamaldehyde
36	Amyl Alcohol
37	Aniline
38	o-Anisidine
39	Iso-butyl methyl ketone
40	Benzoyl Chloride
41	Di-phenyl acetylene
42	2-iodoindole
43	3-Iodoindole
44	2-Bromobenzaldehyde
45	4-Bromobenzaldehyde
46	t-Butyl nitrate
47	2-bromoacetophenone
48	3-bromoacetophenone
49	4-bromoacetophenone
50	2-Bromobenzyldehyde
51	3-Bromobenzyldehyde
52	4-Bromobenzyldehyde
53	4-Bromonitrobenzene
54	4-Nitroacetophenone
55	2-Nitroacetophenone
56	3-Nitroacetophenone
57	4-Chloroacetophenone
58	4-Chlorobenzaldehyde
59	4-Methoxyacetophenone
60	3-Methoxyacetophenone
61	2-Methoxyacetophenone
62	4-Methylacetophenone
63	2-Methylacetophenone
64	3-Methylacetophenone
65	4-Methylacetophenone
66	4-Aminoacetophenone
67	3-Aminoacetophenone
68	4--Aminoacetophenone
69	o-Phenylenediamine
70	m-Phenylenediamine
71	p-Phenylenediamine
72	Furan Boronic acid
73	Aryl boronic acid
74	p-Bromobenzoic acid
75	Pd(OAc) <sub>2</sub>
76	PdCl <sub>2</sub>
77	Alpha tetralone
78	5-Methoy alpha tetralone
79	6-Methoy alpha tetralone



80	4-Nitrobenzaldehyde
81	3-Nitrobenzaldehyde
82	2-Nitrobenzaldehyde
83	4-Methoxybenzaldehyde
84	3-Methoxybenzaldehyde
85	2-Methoxybenzaldehyde
86	Metal aluminium
89	4-Aminobenzaldehyde
90	3-Aminobenzaldehyde
91	2-Aminobenzaldehyde
92	Chlorosilane
93	3-Bromonitrobenzene
94	4-Bromonitrobenzene
95	2-Bromonitrobenzene
96	Ni(OAc) <sub>2</sub>
97	Ni(acac) <sub>2</sub>
98	PEG-600
99	PEG-400
100	PEG-1000
101	PBr <sub>3</sub>
102	Glycine
103	POCl <sub>3</sub>
104	L-Proline
105	Terephthaldehyde
106	Benzoylperoxide
107	Hexamethylenediamine
108	Adipic acid
109	Acrylic acid
110	Methyl Acrylate
111	Methyl Methacrylate
112	2,2'-azo-bis-isobutyronitrile (AIBN)
113	acrylamide
114	acrylonitrile
115	formaldehyde
116	urea
117	$\epsilon$ -caprolactam
118	Adipoyl chloride
119	Ethylene glycol
120	Ethylacetate
121	1,4-Dioxin
122	DMF
123	DMSO
124	Pet ether
125	Tetrachloro auric acid (HAuCl <sub>4</sub> )
126	TLC plate
127	DMG
128	Chlofrom
129	Glucose
130	Fructose
131	Sudan red
132	Sudan yellow
133	acetyl acetone
134	Diethyl ether
135	Fluorescein
136	Alanine
137	Phenylalanine
138	Vallin
139	Leucin
140	Iso-leucin
141	Tryptophan
142	Lysine



143	Aspartic acid
144	Glutamic acid
145	Galactose
146	Talose
147	Rhodamine-6G
148	Mordant red 11 dye
149	Vitamin-C
150	Vinegar
151	EDTA
152	Zinc acetate
153	Aluminium sulphate $\text{Al}_2(\text{SO}_4)_3, 16\text{H}_2\text{O}$
154	PAN indicator
155	Patton Reeder's Indicator
156	EBT indicator
157	Xylenol orange indicator
158	Methyl orange indicator
159	Orange red indicator
160	Phenolphthalein indicator
161	<i>Calgon</i>
162	<i>Methylene blue</i>
163	<i>8-Hydroxquinoline</i>
164	<i>BADS indicator</i>
165	Acetic acid-acetate buffer (pH-5)
166	Ammonium fluoride
167	Mohr's Salt
168	Ferrous sulphate
169	Ferric chloride
170	Zinc sulphate $\text{ZnSO}_4, 7\text{H}_2\text{O}$
171	Copper sulphate $\text{CuSO}_4, 5\text{H}_2\text{O}$
172	Dimethylglyoxime (DMG)
173	Ammonia
174	Ammonium thiocyanate
175	Sodium sulphite $\text{Na}_2\text{SO}_3$
176	Aluminium ammonium sulphate
177	Tartaric acid
178	Oxalic acid
179	Magnesium nitrate
180	Sodium arsenate
181	Hydrogen peroxide
182	Phosphoric acid
183	Zinc Oxide
184	Sodium bismuthate
185	Zn dust
186	Manganese dioxide
187	Ammonium chloride
188	Sodium bromide
189	Potassium ferrocyanide
190	Sodium hypochlorite
191	<i>Ammonium molybdate</i>
192	Sulfanilic acid
193	<i>Alpha-Naphthylamine</i>
194	Dichloromethane
195	Chloroform
196	Acetone
197	Methanol
198	Ethanol
199	Acetonitrile
200	Hexane
201	<i>Cuprous chloride</i>
202	Uranyl zinc acetate
203	Titan yellow



204	Potassium pyroantimonate
205	Soda lime
206	Magnesia mixture
207	<i>Sodium dihydrogen phosphate</i>
208	<i>Bismuth(III) nitrate</i>
209	Potassium dichromate
210	Ammonium dichromate
211	Lead(II) sulfate
212	Potassium ferricyanide
213	<i>Strontium sulfate</i>
214	Strontium nitrate
215	<i>Mercuric oxide (yellow)</i>
216	Magnesium chloride
217	Magnesium sulphate
218	Calcium chloride
219	Ethylenediamine
220	Zinc carbonate
221	Perchloric acid
222	<i>Chromium sulfate</i>
223	Chromium chloride
224	Chromium oxide
225	Potassium carbonate
226	<i>Sodium thiosulfate</i>
227	Iodine
228	KI
229	Ascorbic acid
230	Potassium permanganate
231	HCl
232	HNO <sub>3</sub>
233	H <sub>2</sub> SO <sub>4</sub>
234	<i>Antimony trichloride</i>
235	KMnO <sub>4</sub>
236	NaOH
236	Sodium carbonate
237	Sodium bicarbonate
238	<i>Sodium azide</i>
239	Sodium oxalate
240	Ammonium oxalate
241	Potassium carbonate
242	K <sub>2</sub> Cr <sub>2</sub> O <sub>7</sub>
243	Hydrazine hydrate
244	POCl <sub>3</sub>
245	<i>Ferric Alum [ferric ammonium sulphate; FeNH<sub>4</sub>(SO<sub>4</sub>).12H<sub>2</sub>O]</i>
246	Brass
247	Molecular sieve
248	Whatman-41
249	Parafilm
250	DEM
251	Et <sub>3</sub> N
Sl. No.	Glass Apparatus Name
1	Watch Glass ( 10 cm diameter)
2	Burner
3	Pressure Tubes ( Gas burner)
4	Pestle
5	Cork Borer(Machine)
6	Valvet Corck
7	Thermo-meter (360 °c )
8	Funnel
9	Test Tubes (small)
10	Burette Stand (Iron)
11	Clamp (iron)



12	Test Tube Stand Plastic (12 pieces test tube)
13	Glass Rod
14	Fusion Tube
15	Water Bath
16	Mica Foil
17	Asbestos Board
18	Porcelain Basin
19	Electric Water Bath
20	Moter Pestle
21	Test Tube Stands (Plastic)
22	Fusion Tubes
23	Mica Foil
24	Porcelain Basin
25	Thermo-meters (360 °c)
26	Test Tube Stands (Plastic)
27	Teflon
28	Sample Vials
29	FUNNEL (75 MM DIAMETER)
30	FUNNEL (80 MM DIAMETER)
31	TEST TUBE
32	FUSION TUBE
33	BURETTE (50 ML)
34	PIPETTE (BALL, 5ML)
35	PIPETTE (BALL, 2ML)
36	CAPILLARY TUBE (LONG)
37	BEAKER (100 ML)
38	BEAKER (250 ML)
39	BEAKER (500 ML)
40	CONICAL FLASK (50 ML)
41	STOPPERED BOTTLE (250 ML)
42	VOLUMETRIC FLASK (100 ML)
43	VOLUMETRIC FLASK (250 ML)
44	PIPETTE PUMP
45	IODINE FLASK (250 ML)
46	BEAKER (1000 ML)
47	CONDENSER SET (WITH STD. JOINT)
48	CONICAL FLASK (250 ML)
49	MEASURING CYLINDER (500 ML)
50	MEASURING CYLINDER (100 ML)
51	BURETTE STAND WITH CLAMP
52	BUNSEN BURNER (BRASS)
53	Column
54	Round bottle 10/25/50 ml
55	Separating funnel 50/100/200 ml
56	Condenser 14b/19b/24b/29b
57	Round bottle 1l/2l
58	Vacuum desicator
59	Desicator
60	Two neck rb 10/25 ml
61	Head/ tail 14b/19b/24b
62	Two way joint 14b/19b/24b
63	Beaker 500 ml
64	Beaker 250 ml
65	Beaker 100 ml
66	Melting Point Bath
67	Conical Flask (500 ml)
68	Conical Flask (250 ml)
69	Conical Flask (100 ml)
70	Volumetric Flask (250 ml)
71	Test Tubes for Phenol-Water CST
72	COBALT BLUE GLASS



## Botany

### Chemicals & Glass goods

Sl No.	Name
1	Ammonium hydroxide 25% AR 500ml
2	Ammonium solution 25% 500ml
3	Ammonium sulfate AR 500gm
4	Barfoed's reagent 250ml
5	Benedict reagent (Qualitative) 500ml
6	Benedict reagent (Quantitative) 500ml
7	Borax 500gm
8	Bromothymol blue 5gm
9	Bromothymol blue indicator 25gm
10	1-Butanol 500ml
11	Chloroform 500ml
12	Copper(II) sulfate pentahydrate 500gm
13	Diphenylamine indicator 100gm
14	Diphenylamine indicator AR 100gm
15	Diphenylamine 250gm
16	E D T A disodium salt, dihydrate 100gm
17	Ferrous sulfate 500gm
18	Formaldehyde solution 37% 500ml
19	Glucose (Dextrose) anhydrous 500gm
20	Hydrochloric acid 500ml
21	Isopropanol 500ml (2-Propanol)
22	Millon reagent 500ml
23	Molisch reagent 500ml
24	Alpha naphthol 100gm
25	Ninhydrin AR 10gm
26	Nitric acid 500ml
27	PH buffer capsule 4.00 (10capsule)
28	PH buffer capsule 4.00 (20capsule)
29	PH Buffer capsule 7.00 (10cap.)
30	PH buffer capsule 7.00 (20 cap.)
31	PH buffer capsule 9.20 (10cap.)
32	PH buffer capsule 9.20 (20 cap.)
33	Phenolphthalein solution 125ml
34	Ortho- phosphoric acid 500ml
35	Potassium chromate 500gm
36	Potassium iodide AR 100gm
37	Potassium iodide 250gm
38	Potassium permanganate 500gm
39	Para Dichlorobenzene 500gm
40	Seliwanoff's reagent 500ml
41	Silver nitrate 25gm
42	Sodium hydroxide pellets 500gm
43	Sodium iodide 25gm
44	Sodium iodide 100gm
45	Sodium iodide 250gm
46	Sodium sulfite anhydrous 500gm
47	Sulphuric acid 500ml
48	Tryptophan 5gm
49	D(-) Fructose AR 250gm
50	Lactose AR 500gm
51	Maltose 100gm
52	Maltose 500gm
53	Sucrose 500gm
54	Urea AR 500gm



55	Copper sulfate 500gm
56	Potassium hydroxide pellets 500gm
57	Potassium sodium tartrate 500gm
58	Sodium acetate 500gm
59	Sodium acetate trihydrate 500gm
60	Acetic acid glacial 500ml
61	Sodium carbonate 500gm
62	Tannic acid 100gm
63	Lead(II) acetate 500gm
64	Lead (II,IV) oxide 500gm
65	Diethyl ether 500ml
66	Orcein powder 5gm

## Physiology

### Chemicals & Glass goods

Sl. No.	Items	Sl. No.	Items
1	Red 2,6 dichlorophenol indophenol sodium salt	45	Ammonium persulphate
2	Albumin, Bovine fraction powder	46	TEMED
3	DNA powder	47	Acrylamide
4	RNA powder	48	Bis-acylamide
5	HCl	49	Sephadex
6	H <sub>2</sub> SO <sub>4</sub>	50	Sepharose
7	HNO <sub>3</sub>	51	Agarose
8	Potassium thiocyanate	52	Beef extract: microbial gr.
9	Potassium ferrocyanide	53	Peptone: microbial gr.
10	KI	54	Agar Agar: microbial gr.
11	Iodine	55	Filter paper: Whatman
12	Acetic anhydride	56	Proteosepeptone
13	Resorcinol	57	Phenol red
14	Thymol	58	β- dimethyl aminocinamaldehyde
15	Formaldehyde	59	Tetramethyl β-phenylenediamine
16	Methanol	60	NH <sub>4</sub> -dihydrogen phosphate
17	Na- arsenate	61	Bromothymol blue
18	Mercuric oxide	62	Amyl alcohol
19	NH <sub>4</sub> -molybdate	63	Tryptophan bath
20	ZnSO <sub>4</sub>	64	Nitrate bath
21	Di-sodium hydrogen arsenate	65	α- Naphthylamine
22	Na-tungstate	66	K-phosphate
23	Tartaric acid	67	Dipeptone
24	Molybdic acid	68	Methyl red
25	Cholesterol	69	India ink
26	Thiosemicarbazide	70	Nigrasin
27	3,5 Di-nitro salicylic acid	71	Bromophenol blue
28	Ninhydrin	72	Sephacryl-200
29	Amylase enzyme	73	Xylol
30	Na-nitrite	74	Mercury
31	2,4-Dichloro aniline	75	Perchloric acid
32	Sulfanilic acid	76	(NH <sub>4</sub> ) <sub>2</sub> SO <sub>4</sub>
33	Bilirubin	77	pH indicator paper booklet (range: 6.4-8.4; graduation: 0.2-0.3) Merck
34	Benzoic acid	78	Paraffin (48°-50°)
35	Di-sodium phosphate	79	Amylase (diastase)
36	Potassium iodate	80	Catalase
37	NH <sub>4</sub> HCO <sub>3</sub>	81	H <sub>2</sub> O <sub>2</sub>
38	Tris	82	Isoamyl alcohol
39	EDTA	83	RNAse A
40	Phenol	84	Orcin, Merck
41	Chloroform	85	Acid Fuchsin, Merck
42	Proteinase K	86	Light Green SF yellowish, Merck
43	TE buffer	87	Orange G, Merck
44	Isopropanol		



Sl. No.	Items	Make
1	Test tubes	Borosil/ Borosil R/ Borosil Glass
2	Glass slides	
3	Cover slip (round & square)	
4	TLC Plates	E- Marck
5	Conical flask (50, 100 & 250 ml)	Borosil/ Borosil R/ Borosil Glass
6	Beaker (50, 100, 250 & 1000 ml)	Borosil/ Borosil R/ Borosil Glass
7	Micropipette (0.5, 1, 2 & 5 ml)	
8	Microburette	
9	Reagent bottle (50, 100 & 250 ml)	Borosil/ Borosil R/ Borosil Glass
10	Pasteur pipette	
11	Spirit lamp	
12	Folin-Wu tube	
13	Laboratory media bottle	Borosil/ Borosil R/ Borosil Glass/ Tarson/Falcon
14	Petri dish (glass & plastic, tissue and microbial culture grade)	Borosil/ Borosil R/ Borosil Glass/ Tarson/Falcon

### Physics Chemicals & Glass goods

Item	Name of the company
Glass prism (60°)	Any Reputed Company
Grating (15000 lines/inch)	
Plano convex lens (2.5 cm dia)	
Glass plate (2.5 cm dia)	
Measuring cylinder (10 ml, 25ml, 50ml)	
Glass Funnel (16 cm mouth dia)	
Beaker (1L, 500ml)	
Hydrogen discharge tube	
Thistle funnel (30 cm long)	
Capillary tube (56 cm long 1mm dia)	
Magnifying glass (7 cm dia)	
Spirit lamp	
Methylated spirit	
FeCl <sub>3</sub>	
Mercury	
Sand paper	
Rubber pipe (6mm, 8mm dia)	



## Zoology

### Chemicals, Glass goods & Specimens

Serial No.	Name	Specification
1	Grooved glass slide	Blue Star
2	Rectangular cover slip	Blue Star
3	Filter Paper	Whatmann
4	Winkler Bottle (white)	Borosil 250 ml
5	Winkler Bottle (Amber)	Borosil 250 ml
6	Beaker Glass	Borosil 100 ml
7	Beaker Glass	Borosil 250 ml
8	Beaker Glass	Borosil 500 ml
9	Beaker Glass	Borosil 1000 ml
10	Conical flask	Borosil 100 ml
11	Conical flask	Borosil 250 ml
12	Conical flask	Borosil 500 ml
13	Conical flask	Borosil 1000 ml
14	Petri dish Plastic	Tarson, 100 mm diameter
15	Measuring cylinder	Borosil 100 ml
16	Measuring cylinder	Borosil 50 ml
17	Measuring cylinder	Borosil 500 ml
18	Rubber headed glass pipette	
19	Plastic dropper	
20	Test tube	Borosil
21	Test tube holder	
22	Test tube Rack	
23	Glass funnel small	Tarson
24	Glass funnel large	Borosil
25	Coupling jar set of 12	Borosil
26	Glass vial with cork	
27	Staining rack for keeping glass vial	
28	Polythene jar for distilled water	500 ml capacity
29	TLC Jar for Paper chromatography	
30	TLC plate	
31	Soil testing Kit	
32	DNA extraction kit	Nice
33	ABO blood group testing kit	Qiagen or others
34	Bacterial DNA extraction kit	
35	Plasmid DNA extraction kit	
36	Aceto orcein powder	
37	Perchloric acid	
38	Nitric perchloric Acid	
39	Malathion	
40	Methyl -p hydroxy benzoate (Sodium salt)/Methyl paraben	Loba/biomedicals or others
41	Propionic acid	
42	Mnganous sulphate	
43	Sodium thiosulphate	
44	Starch	
45	Alumiinium Foil	
46	EDTA	
47	Eriochrome Black T	
48	Potassium chromate	
49	Potassium dichromate	
50	Potassium Hydroxide	
51	Potassium Iodide	
51	Borax	
52	Sodium Sulphide	



53	Sodium hydroxide	
54	Gelatin Powder	
55	Carboxy methyl cellulose	
56	Glycerol mono stearte	
57	HAS : A 9511 Sigma Aldrich	
58	BSA : A 0281 Sigma Aldrich	

1	Slide whole mount	<i>Euglena</i>
2		<i>Amoeba</i>
3		<i>Paramoecium</i>
4		<i>Opalina</i>
5		<i>Plasmodium vivax</i>
6		<i>Plasmodium falciparum</i>
7		<i>Leishmania</i>
8	Slide cross section	T.S. through pharynx of earthworm
9		T.S. through gizzard of earthworm
10		T.S. through typhlosolar intestine of earthworm
11	Slide whole mount	Bipinnaria larva
12		Plutius larva
13	Slide cross section	TS of <i>Sycon</i>
14		LS of <i>Sycon</i>
15		TS of Sea anemone
16		LS of Sea anemone
17		TS of <i>Ascaris</i> male & female
18	Histological slide	Spleen
19		Thymus
20		Lymph Node
21		Cartilage
22		Bone
23		Spinal cord
24		Mammalian skin
25		Nerve cell
26		Pituitary
27		Parathyroid
28		Striated muscle fibre
29	Whole Specimen in jar	Myxine
30		<i>Trionyx</i>
31		<i>Zamenis</i>
32		<i>Crocodylus</i>
33		<i>Poterion</i>
34		<i>Millipora</i>
35		<i>Tubipora</i>
36		<i>Alcyonium</i>
37		<i>Heteronereis</i>
38		<i>Sabella</i>
39		<i>Serpula</i>
40		<i>Palamnaeus</i>
41		<i>Balanus</i>
42		<i>Sacculina</i>
43		<i>Dentalium</i>
44		<i>Peripatus</i>
45		<i>Helix</i>
46		<i>Ostrea</i>



Installation of items for Media Room	<b>Ultra-short Throw Laser Full HD 3LCD,</b> White and colour brightness of 4,000 lumens, Ultra-short Throw 80" 47cm F-Number 1.60, Focal Length 4.2 mm, Zoom Ratio 1.0 - 1.35 (Digital zoom), Throw Ratio 0.27 - 0.37 (Wide - Tele), Lightsource Type Laser Diode, Life (Normal / Extended) 20,000 / 30,000 hour <b>Screen Size (Projected Distance):</b> Zoom: Wide 70" to 130" [40.5 to 78.1 cm] Zoom: Tele 70" to 130" [55.8 to 106.7 cm] Standard Size 90" screen [53 to 72.8 cm] <b>Geometric Correction Keystone:</b> Vertical -3 to +3 degrees Horizontal -3 to +3 degrees Auto Keystone N.A. Quick Corner Yes <b>Connectivity:</b> Analog Input: D-Sub 15Pin 1 (Blue) Composite RCA x 1 (Yellow) Digital Input: HDMI 3 (HDMI1 in common with MHL) USB Type A2 (for USB Memory, USB Document Camera, Firmware update, Copy OSD Settings) USB Type B1 (for USB Display, Mouse, K/B, Control, Firmware Update, Copy OSD Settings) Analog Output Terminal D-Sub 15Pin1 (Black) Audio Input Stereo Mini Jack2 Audio Output Stereo Mini Jack1 Others USB Type A2 (for USB Memory, <b>Network</b> Wired LAN RJ45 x 1 (100 Mbps), Wireless Yes (ELPAP10 Option)
Projector with adjustable wall mount kit	
Amplifier	JBL/Equivalent 2/4 channel
Speaker	JBL/Equivalent Columnner speaker with Accessories and Cable/wire
Microphone with stand	Corded
Wireless Microphone	
Audio Visual Recording	
Podium	Podium with storage facility of computer, Amplifier etc.
Coolar Microphone	Ahuja or equivalent
Laser Pointer	Any reputed Company
CCTV Camera	<ul style="list-style-type: none"> <li>❖ <b>Technical Specifications: IP Based CCTV System</b></li> <li>1. <b>Description in General:</b></li> <li>❖ The System proposed is IP based CCTV System. The objective shall be to provide high degree of IP (High Resolution) based Electronic surveillance to the entire premises of three Hostels and their territorial areas, Jhargram Raj College, Jhargram. It is also essential to have recorded images of all cameras to be stored at least for 30 days to facilitate investigations of a reported case.</li> <li>❖ This section of the specification includes the supply, installation, minimum three years of warranty and maintenance of the IP CCTV system and imparting training to concerned officials in connection with IP CCTV system including all components.</li> <li>❖ All equipment and materials used shall be standard components from the current line/range of products that are regularly manufactured and used in the system.</li> <li>❖ <b>Sundry items: The quoted rate shall include the cost of all minor/sundry items to make it functional.</b></li> <li>2. <b>Scope:</b></li> <li><b>Overview of the system</b>          Proposed system consists of 24 pieces (Approx.) of 4 MP IP cameras fitted with NVR/servers, switches, storage, internet pairing system, workstations, IPS LED Backlit HD Monitor, UPS, cables with all necessary       </li> </ul>



accessories to make CCTV functional.

The proposed locations of cameras and their type are indicated as below.

The control room which is proposed on Ground Floor (New Boys' Hostel).

The system shall consist of following main components:

- a) High resolution IP cameras
- b) NVR with HDMI Displaying facility
- c) POE switches
- d) Internet pairing Devices (Outdoor CPE)
- e) Storage and additional external hard disk
- f) IPS LED Backlit HD Monitor
- g) Cables and accessories, etc.

The vendors will be responsible for total installation, test & commission the system. The viewing angles and clarity, etc. shall be shown to the officials/Superintendent of Hostels of Jhargram Raj College to their satisfaction before finalizing the location, zoom and angle, etc. The specifications of all components shall be strictly followed and shall be as per given technical specifications or better.

### 3.0 Applicable standard:

Original Equipment Manufacturer Standard.

### 4.0 Approvals:

As given in technical specifications

### 5.0 System Components:

**General: All the vendors must fulfill the point by point specifications of each and every individual component strictly.**

#### 5.1. Network Video Recorder (NVR) and NVS (Quote as per unit)

1. The equipment envisaged is a 16 channel NVR recorder suitable for Megapixel IP cameras with built in ports for easy connection compatible with proposed IP cameras. It should be equipped with H.265 Video codec encoding. The NVR shall support minimum 12 TB hard drives and higher. It should have HDMI and VGA output for high resolution output to a HD TV or computer monitor.
2. **Real time:** It should record all cameras at 1080p reposition at 25/30 fps per camera without any frame skipping. Further the recording can be motion activated recording or calendar based recording or manual mode. It should accept 4 MP and higher IP cameras and higher. It should have user selectable recording resolutions: 4 MP, 2 MP, 1.3MP, etc. It should have adequate input bit rate.
3. It should be possible to easily configure IP cameras on the same network. It should also be possible to have real time viewing in HD for all cameras on NVR.
4. Recording should start on SD card if Network or server fails. The network failure is registered immediately if the failure is longer than 10 seconds. Once the network connection has been restored, gaps in the recording are automatically filled without manual intervention.
5. Storage must be programmed for disc management system which will automatically reap old recordings to overwrite with the new ones when maximum usage is reached.
6. The system shall be able to carry adequate hard disks to achieve at least 12 TB recording storage. The system shall support dual gigabit Ethernet ports.
7. The system shall be able to centrally configure all devices and system settings from one interface.
8. The system shall support system status watchdog and automatically restart the system when abnormal event happened.
9. The system shall include management server, recording server, metadata server, and client for configuring and viewing.
10. The management server shall be able to centrally manage all servers in the system including configuration, license management, and event monitor.
11. **The system shall support more features by upgrading, without re-install or re-configuring the whole system**

Sl. No	Description
1	Operating System : Embedded Linux
2	IP Camera Input : Min 16 Channel
3	Two way talk : 1 Channel O/P and 1 Channel I/P
4	Video O/P : 1 HDMI , 1 VGA
5	Compression : H.264 / MJPEG
6	Video Resolution : 2560 X 1920 , 2048 X 1536, 1920 X 1080, 1280 X 720
7	Recording Resolution : 1920 X 1080



8	<b>Recording Speed:</b> upto 30 fps per channel
9	<b>Video Display Split :</b> 1/4/8/9/16
10	<b>Video Detection:</b> Motion, Video Loss, Camera Blank
11	<b>Alarm Input :</b> 4 Channel
12	<b>Hard Disk :</b> Min 2 SATA ports , 12TB, Raid (Redundancy)
13	<b>Smart Phone Surveillance Support:</b> iPhone, iPad, Android, Windows Phone
14	<b>Protocol :</b> IPv4/IPv6, HTTP, TCP/IP, UDP, UPnP, RTSP, SMTP, NTP, DHCP, DNS, PPPOE, DDNS, FTP, IP Filter, CPE (outdoor)
15	<b>Trigger Event :</b> Recording, Alarm, Email, FTP, Screen tips
16	<b>Recording Mode :</b> Manual , Schedule , STOP, Alarm and MD
17	<b>Search Mode :</b> Time/Date , Alarm , Motion Detection , Exact Search (accurate to second)
18	<b>Playback :</b> Play, Stop, Pause, Rewind, Fast Play, slow play, full screen, backup
19	<b>Backup Mode :</b> USB Device / Network
20	<b>Interface Ports :</b> USB 2.0 port, USB 3.0 port , 1 RS485 , 1 RS232,1 RJ45
21	<b>Ethernet Ports :</b> 1 RJ-45 port (10/100M Base T)
22	<b>Power Supply :</b> AC 100V~240V 50/60Hz
23	<b>Regulatory :</b> CE, FCC,UL
24	<b>Product warranty:</b> at least 3 years
25	<b>Working environment:</b> 0°C-55 °C with 80% relative humidity

*Note: The vender should also confirm to provide free upgrade of software and camera firmware as and when released for support of ONVIF standards.*

**5.2. Day/Night IP HD camera (Bullet) with IR (4MP) (Quote as per unit)**

Sl.No.	Parameter	Specification
1	Image sensor	1/3" or better type CMOS colour Sensor
2	Effective Pixels	1920x1080 (4MP)
3	Scanning System	Progressive Scan
4	Resolution	1080p Full HD images up to 25/30 fps
5	Min Illumination	Day Mode (colour) – 0.10 lux, Night Mode (Monochrome) – 0 lux when LED ON
6	White Balance	Automatic/ Manual
7	High Light Compensation	Required
8	Electronic Shutter	Auto
9	Gain Control	Auto/Manual
10	Day and Night functionality	Automatic, Color, Mono
11	Signal-to-Noise Ratio (SNR)	More than 50dB
12	Dynamic Noise Reduction (DNR)	3DNR
13	IR Distance	Upto 80 m
14	Lens	2.7 mm-12 mm
15	Wide Dynamic Range	Min 90 dB WDR
16	Television System	NTSC/PAL
17.a	Frame Rate	25 FPS/30 FPS for 1920 x 1080p at H.264 Compression or better
17.b	Compression	H.264 Compression (main profile/high profile) and MJPEG
18	Bit Rate	32Kbps – 10Mbps
19	On-board storage Support	MINIMUM 64 GB SDXC/SDHC/SD Memory recording
20	Alarm Event	Events/alerts send via FTP, HTTP, email, Pre-Post alarm video buffering.
21	Video Streams	2 Streams of H.264 and 1 Stream of MJPEG
22	Dual H.264 (Recording & Viewing)	Required, Live stream 1080p should support min. 25/30 FPS and recording lower resolution and frame rate or vice versa as may be configured.
23	Intelligent Video	Motion detection etc.
24	Ethernet	10Base-T / 100Base-TX, RJ-45 connector
25	Network Protocols support	IPv4/IPv6, TCP/IP, HTTP, HTTPS , DHCP, UDP, DNS, SMTP, RTP, RT SNMP, IGMP, ICMP, NTP, 802.1x protocols/Should meet all functional requirement of the project
26	Weather protection, Dust Protection, Heat surge protection vandal Outdoor Use	IP66, IK10 or better
27	Housing	Weather and dust resistance with an aesthetic appeal (Metallic) IP66 rated
28	View Material	Poly carbonate/ Vandalproof
29	Ambient Operating Temperature	0 °C to 55 °C



30	Ambient Operating Humidity	20 to 80% RH non-condensing
31	Power Source	230 VAC/24VAC. PoE should be available on camera
32	Power Consumption	As per IEEE PoE Standards
33	Mounting	Shall be on pole with stand /wall mounted/ceiling mounted with suitable brackets including sun-shroud / canopy
34	Surge/Lightening Protection	Required (Internal/External ) Industrial grade 500 V protection on POE or 1.5KV protection level on Power adapter
35	Certifications	Specific models should be UL listed,CE, FCC compliant

### 5.3. Internet Paring devices

### 5.4. LED display screen (Quote as per unit)

Display size	68.6 cm (27 in) diagonal
Display type	IPS with LED Backlight
Panel active area	59.8 x 33.6 cm (23.5 x 13.2 in)
Brightness	250 nits
Color gamut	72%
Color support	Up to 16.7 million colors with the use of FRC technology
Pixel pitch	0.3114 x 0.3114 mm 82 PPI
Inputs	1 VGA, 2 HDMI; NOTE: HDCP support on digital inputs
Viewing angle	Horizontal viewing angle (typical): 178 degrees Vertical viewing angle (typical): 178 degrees
Recommended resolution (H x V)	1920 x 1080 (Full HD)
Aspect ratio	16:9
Static contrast ratio	Up to 1000:1
Dynamic contrast ratio	Up to 10,000,000:1
Response time	7 ms gray to gray with overdrive
Power consumption	28 Watts max.
Tilt	-5 to +25 degrees
Power Supply	External
Dimensions	W x D x H (unpacked): 62.2 x 19.6 x 45.5 cm (24.5 x 7.7 x 17.9 in)
Weight	Unpacked: 3.8 Kg (8.4 lbs)

### 5.5. Surveillance HDD (Quote as per unit)

Specification	8TB	6TB	4TB
Interface	SATA 6Gb/s	SATA 6Gb/s	SATA 6Gb/s
Cache	256MB	128MB	64MB
Bytes per Sector	4096	4096	4096
R/V (Rotational Vibration) Sensor	Yes	Yes	Yes
Drive bays supported	8+	8+	8+
Cameras Supported	Up to 64	Up to 64	Up to 64
Max Sustainable Transfer Rate	230MB/s	180MB/s	180MB/s
3-Year Option With +RescueModel	Yes	Yes	Yes
Voltage Tolerance, Inc. Noise (5V)	±5%	±5%	±5%
Voltage Tolerance, Inc.Noise (12V)	±10%	±10%	±10%
Startup Power (12V, A)	1.8	1.8	1.8
Average Operating Power	9.0W	9.0W	5.6W
Idle Average	7.6W	7.2W	4.0W
Standby Mode	0.6W	0.6W	0.5W
Sleep Mode	0.6W	0.6W	0.5W
Operating (ambient, min)	5°C	5°C	0°C
Operating (drive case, max)	60°C	60°C	70°C
Nonoperating (ambient, min)	-40°C	-40°C	-40°C
Nonoperating (ambient, max)	70°C	70°C	70°C
Tarnish Resistant <sup>†</sup>	Yes	Yes	Yes
Load/Unload Cycles	300,000	300,000	300,000
Nonrecoverable Read Errors per Bits Read, Max	1 per 10E15	1 per 10E14	1 per 10E14
Mean Time Between Failures	1,000,000hr	1,000,000hr	1,000,000hr
Power-On Hours	8760	8760	8760
Warranty, Limited (years)	3	3	3
Height	26.11mm	26.11mm	26.11mm
Height	1.028in	1.028in	1.028in
Width	101.85mm	101.85mm	101.6mm
Width	4.010in	4.010in	4.0in



Depth	147.00mm	147.00mm	146.99mm
Depth	5.878in	5.878in	5.787in
Typical Weight	780g	780g	610g
Typical Weight	1.72lb	1.72lb	1.345lb

**5.6. External hard Drive for Routine backup: High-speed USB 3.0 connectivity without the need of an external power supply and 18-inch (45.72cm) USB 3.0 cable Quick start guide. (Quote as per unit)**

Capacity: 2TB

**5.7. Optical wireless Mouse and key board: (Quote as per unit)**

Colour	black
Item Height	47 Millimeters
Item Width	14.9 Centimeters
Item Weight	816 g
Product Dimensions	52.6 x 14.9 x 4.7 cm
Batteries:	3 AA batteries required.
Hardware Platform	Windows
Lithium Battery Energy Content	4 Watt Hours
Lithium battery Weight	0.85 Grams
Number of Lithium Ion Cells	1
Included Components	Keyboard, Mouse

**5.8. Unmanaged Network Switches (4 port and 8 port) (Quote as per unit)**

Sl. No.	PARAMETERS	DESCRIPTION
1.	Type	Gigabit Ethernet
2.	Operation	Store & forward
3.	Max MAC entries	4000
4.	Memory bandwidth	At least 8 Gbps
5.	RJ45 ports	Minimum 4/8 nos. 10/100/1000 BASE-T Ethernet Ports. Uplink port should have sufficient speed to avoid network congestion, preferably network should not be loaded more than 70% at any stage, fully IEEE 802.3 compliant
6.	Protocols and compliances	The switch should provide all standard protocols and compliances
7.	Power input	Dual redundant power input, PoE
8.	storage temperature	0 to 70°C
9.	Humidity	95% max RH, non-condensing
10.	Ingress protection	IP30 protection minimum
11.	Mounting	Rackmount, wall or desktop mounting options

**5.9. CAT 6 cables (Quote as per meter of the required cable)**

S.NO	FEATURE	REQUIRED PARAMETERS
1	Type of Cable	Unshielded Twisted Pair (UTP) CAT 6 cable Pair-shielded 100 Ohm installed cable with overall braided screen, suitable for transmission frequencies of up to 100 MHz
2	Conductor	4 pair UTP armoured cable 23 AWG Solid bare Copper
3	Primary insulation	High Density polyethylene
4	Outer Sheath	FR-PVC Insulation thickness 0.2 mm nominal
6	Shielding	Screened to ensure protection against EMI and for cross talk compliance.
7	Application standard	ANSI/TIA-568-C.2 category 6 ISO 11801 Class E
8	Application	Indoor / outdoor installation

**5.10. Earth Cable (if required)**

All power equipments installed shall be earthed with 1 core 2 sq mm, multi strand, copper, PVC wire, PVC insulated unarmoured cable.

**Earth Pits:** Earth pits shall not be made.

**5.11. Breakers and Fuses:**

- All electrical circuits shall be fed from molded case circuit breakers, installed in the "line" lead, using separate breaker for each circuit. Neutrals may be bussed but must be identified with the associated circuit breaker.
- Each type of power supply (230 V AC, 50Hz) of each section shall be isolated by means of adequately



- rated single pole thermal magnetic circuit breaker.
- iii. Circuit breaker shall be of the miniature thermal magnetic type and shall be of plug in construction (supply with plug in terminal block)
  - iv. Current trip rating shall be selected to protect the load as applicable, for instrument supply generally 0.5A (assumed), common circuit breaker is to be provided to switch on and off the AC supply of the control system.

#### 5.12. Cable laying

Cable laying shall conform to BIS norms. For underground cables DWG conduits shall be used and in case of cables above ground PVC capping- casing to be used, as per BIS standards.

#### 5.13. 500VA UPS with in-built batteries for backup: Application: Power supply requirement for IP CCTV

##### Input:

- Nominal AC Input Voltage: 1 Phase 230V AC + Neutral + Earth , 50 Hz
- Line low/ High transfer:  $\pm 15\%$
- Frequency range:  $\pm 5\%$
- Voltage: 220VAC/ 230VAC/ 240VAC
- Voltage Regulation:  $\pm 1\%$
- Frequency: 50/60 Hz  $\pm 0.1\%$
- Output waveform: Pure sinewave
- Power factor: 0.7 to unity
- Crest factor(max): 6:1
- Inverter overload capacity: 110% 10 min./ 125% 1 min/1000% 1 cycle.
- Efficiency (AC – DC): 90%
- LCD display

#### Rack features:

1. Rack should be of specified OEM with robust aluminium extruded frame construction and full vented top cover with cable entry provision and gland plates on top and bottom cover.
2. The rack should have castors.
3. 19" equipment mounting angles and depth support channel
4. Side panels should have slam lock facility
5. Other features as per industry standard.

#### 8. List of makes

Sl.No.	Equipment	Makes
1	IP Cameras (4 MP)	Pelco/Hikvision/CP Plus/Honeywell/TVT
2	NVR	Pelco/Hikvision/CP Plus//Honeywell/TVT
3	HDD	Seagate/Toshiba
	External DD	Seagate/Toshiba
4	LED Monitors	Samsung/HP
5	Switches	Dlink/Netgear
	Internet Pairing	Dlink/TP Link
6	Cables	Polycab/Caliplast/Belden/Finolex/Comscope
7	Networking Rack	Netrack/APW/Valrack
8	Cat 6 Cable	D-link/ Schneider Polycab/Caliplast/Belden/Finolex
9	UPS	APC

#### Tentative Requirement

Sl.No.	Equipment	Unit
1	IP Cameras, Bullet (4 MP)	20
	IP Cameras, Dome (4 MP)	10
2	NVR, 16 Chanel	03
3	HDD, 4TB	02
	External backup HDD	01
4	LED Monitors	02
5	Switches	As require
	Internet Pairing	02
6	Power Cables	1000 mts.
7	Networking Rack	04
8	Cat 6 Cable	1000 mts.
9	UPS	02



SI No.	Item	Make	Model No.	Unit Price (INR)	GST (INR)	Total (INR)
1.	IP camera (Bullet), 4 MP	Pelco				
2.	IP camera (Bullet), 4 MP	Hikvision				
3.	IP camera (Bullet), 4 MP	CP Plus				
4.	IP camera (Bullet), 4 MP	Honeywell				
5.	IP camera (Bullet), 4 MP	TVT				
6.	IP camera (Dome), 4 MP	Pelco				
7.	IP camera (Dome), 4 MP	Hikvision				
8.	IP camera (Dome), 4 MP	CP Plus				
9.	IP camera (Dome), 4 MP	Honeywell				
10.	IP camera (Dome), 4 MP	TVT				
11.	NVR 16 channel	Pelco				
12.	NVR 16 channel	Hikvision				
13.	NVR 16 channel	CP Plus				
14.	NVR 16 channel	Honeywell				
15.	NVR 16 channel	TVT				
16.	NVR 8 channel	Pelco				
17.	NVR 8 channel	Hikvision				
18.	NVR 8 channel	CP Plus				
19.	NVR 8 channel	Honeywell				
20.	NVR 8 channel	TVT				
21.	LED display screen, 27"	HP				
22.	LED display screen, 27"	Samsung				
23.	Surveillance HDD, 6 TB	Seagate				
24.	Surveillance HDD, 4 TB	Seagate				
25.	External Hard Drive, 2TB	Seagate				
26.	External Hard Drive, 4TB	Seagate				
27.	Wireless Mouse and key board	HP				
28.	Wireless Mouse and key board	Dell				
29.	PPE	D-link				
30.	CPE-Outdoor	D-link				
31.	PPE	TP-link				
32.	CPE-Outdoor	TP-link				
33.	UPS, 1KV	APC				
34.	UPS, 1.5 KV	APC				
35.	Switches	D-link				
36.	Switches	Netgear				
37.	CAT 6 Cables/meter	Polycab				
38.	CAT 6 Cables/meter	Caliplast				
39.	CAT 6 Cables/meter	Belden				
40.	CAT 6 Cables/meter	Comscope				
41.	CAT 6 Cables/meter	Finolex				
42.	Networking Rack	Netrack				
43.	Networking Rack	APW				
44.	Networking Rack	Valrack				
45.	Other Items					
46.	Other Items					
47.	Other Items					
48.	Other Items					
49.	Other Items					

1. Big size plastic waste box (red/green/yellow/for different type of waste materials)
2. EXIDE / LUMINOUS Inverter machine (for 16 plates or equivalent big size battery)
3. EXIDE BATTERY (16 plates or equivalent big size battery)
4. Cartridges for colour printer (HP colour Laser Jet : CF 350A)



## Category- II (Maintenance & Repairing)

Head	Department	Item	Remark
Maintenance of equipment	Botany	BOD Incubator, Colorimeter, Microscope (cleaning), pH Meter, Refrigerator, Spectrophotometer	Either servicing or repair (after inspection, if required)
	Physiology	Microscope	
	Zoology	AC machine, BOD incubator, Colorimeter, Computer (CPU, Key board, Monitor, Mouse, Printer, Scanner, UPS, etc.), Digital balance, Distilled water plant, Generator set, LCD projector, Microscope, Modem, pH meter, Photocopier, Refrigerator, Spectrophotometer, incubator, wax tray.	
	Physics	CRO (dual stress), Function generator, Regulated power supply ( 0-30 V , 0-5 A), Regulated power supply (0-12V), Regulated power supply (0-5V), Digital milliammeter (0-200mA), Digital microammeter (0-200 $\mu$ A), Digital voltmeter (0-20/2V), AC millivoltmeter, Digital balance, Microscope (cleaning cross hair fitting), Spectrometer (cleaning), Computer Monitor/Printer etc.)	
Furniture maintenance	Botany	Polishing of Wooden Furnitures (Sq. Ft.) Steel Almirah Locks and Handles; Installation of Glass racks in the Display Windows (Sq. Ft.)	
	Physics	Glass plate to be fitted in the wooden almirah, Steel almirah to be painted	
	Zoology	Steel/Wood/Steel with glass door /Wood with glass door Almirah repairing including glass replacement, repair of body door, handle, lock etc., Locker repair, Top/leg/side/drawer/part repair or gap filling of Laboratory tables, Chair, Table, Repair of high & low bench - top, leg, drawer, handle, base, stand, wheel, part etc., Notice board, Black board, Replacement of Staff name plate	
Maintenance of Water purifier	Botany , Zoology	Cleaning, Iron filter, AMC, Checking/replacement of UV lamp/cartridge etc.	Either servicing or repair (after inspection, if required)
Plumbing works	Botany, Physics	Replacement of all Iron Pipes with new PVC Pipes of all the Laboratories, Instruments Rooms, Aquaguard water supply lines, Outlets to be made from the sink if required	
	Zoology	Removal or replacement of all Iron Pipes with new PVC Pipes of all the Laboratories, Instruments Rooms, Aquaguard water supply lines, bathroom, Installation/repair/replace of basin/sink water line, tap etc. in entrance corridor, HOD/Research room, Laboratories etc., Outlets to be made from the sink if required, Western toilet (anglo Indian preferably), basin, tap, female urinal etc in bathroom	
	Botany	1.Compound Microscope(Zeiss,Olympus) x 25Nos. 2.Digital UV-Vis Spectrophotometer Systronics. 3.Digital Cold Centrifuge. 4.BOD Incubator 300Ltr. 5.Color Scanner EPSON. 6.Trinocular Digital Microscope(Leitz). 7.TLC Complete Set up. 8.DSLR Camera(28-300mm) Sony, Canon,Nikon. 9.Microtome. 10.Slide Rack(Wooden/Metal). 11.Chemicals(AR/MB)(Sigma/Merck/SRL) 12.Steel Almirah with Glass Door-3Nos. 13.Overhead Projector .	



	14.Digital Projector (Sony). 15.White Board(6" x 4") 16.Air circulator. 17.Exide Tubular Battery. 18.Vacuum cleaner 19.Refrigerator 300L. 20.Memory Cards for cannon Power Shot Camera. 21.Memory Cards for Sony HandiCam. 22.HP Laserjet Printer. 23.HP Printer Cartridge (88A,12A) 24.Glass Goods (Borosil). 25.Turn Table for Glass Slides. 26. Microscope Lamp. 27. Extension Cords (15 & 5 Amps) 28.Burette (Tarsons). 29.Plastic Wares(Tarsons). 30.Laser Printer Cartridge (HP 88A/12A). 31.Microtome Blades.	
Repairing & Maintenance Works	<ol style="list-style-type: none"> <li>1. Repairing of Inverter/ Purchase of new inverter.</li> <li>2. Repairing of Battery of Inverter/ Purchase of new Battery</li> <li>3. Repairing of colour printer</li> <li>4. Repairing of Photocopier machine</li> <li>5. Repairing of Iron removing cylinder</li> <li>6. Repairing of Table Tennis Board/ Carrom Board</li> <li>7. Repairing of Steel/Wooden Almirah &amp; Lock.</li> <li>8. Repairing of Aquaguard/ Microscope/ refrigerator/ Spectrophotometer / Bacteriological incubator/Hot air oven/BOD incubator/ Distilled water plant/ pH meter/ LCD projector</li> <li>9. Object Scan 1600 microtek, Microscope, Refrigerator, Spectrophotometer, BOD incubator, pH meter, Colorimeter, Distilled water plant, Photocopier, LCD projector, Generator set, AC machine, Computer CPU, Printer, UPS, Scanner, mouse LaserJet CP1525n HP scanner cum printer etc., Laminar Air flow, Cooling microfuge, Air cooler, Microtome machine, Incubator, Bacteriological Incubator, Hot plate, Heater, Cryostat, Hot cum cold circulating bath, Water bath, Hot air oven, magnetic stirrer, Digital Balance, Digital pH meter, Weight machine, LCD Projector, OHP Motorised projector screen 6x4 feet, 8x6 feet, 10x8 feet, laser beam</li> </ol>	
Repairing & Maintenance Works	<ol style="list-style-type: none"> <li>1. Repairing of Inverter/ Purchase of new inverter.</li> <li>2. Repairing of Battery of Inverter/ Purchase of new Battery</li> <li>3. Repairing of colour printer</li> <li>4. Repairing of Photocopier machine</li> <li>5. Repairing of Iron removing cylinder</li> <li>6. Repairing of Table Tennis Board/ Carrom Board</li> <li>7. Repairing of Steel/Wooden Almirah &amp; Lock.</li> <li>8. Repairing of Aquaguard/ Microscope/ refrigerator/ Spectrophotometer / Bacteriological incubator/Hot</li> </ol>	



	air oven/BOD incubator/ Distilled water plant/ pH meter/ LCD projector	
	9. Object Scan 1600 microtek, Microscope, Refrigerator, Spectrophotometer, BOD incubator, pH meter, Colorimeter, Distilled water plant, Photocopier, LCD projector, Generator set, AC machine, Computer CPU, Printer, UPS, Scanner, mouse LaserJet CP1525n HP scanner cum printer etc., Laminar Air flow, Cooling microfuge, Air cooler, Microtome machine, Incubator, Bacteriological Incubator, Hot plate, Heater, Cryostat, Hot cum cold circulating bath, Water bath, Hot air oven, magnetic stirrer, Digital Balance, Digital pH meter, Weight machine, LCD Projector, OHP Motorised projector screen 6x4 feet, 8x6 feet, 10x8 feet, laser beam	

Tender completed in all respect should reach in the office of the Principal, Jhargram Raj College, Jhargram latest by 15.00 Hours on 22<sup>nd</sup> January 2020,

The Tender will be opened on the same day at 17.00 Hours.

Rates & specification should be quoted in the respective tender inclusive of all taxes and delivery charges, if any.

The detailed terms and conditions of the tender and item wise number and specification may be obtained from the office of the undersigned and it can also be seen on college website- [www.jrc.ac.in](http://www.jrc.ac.in).

The undersigned reserves every right to reject /cancel any or all tender and to alter/amend the terms & conditions of the tender without assigning any reason thereof, if required.

No. 46 (6) / Q-2

Date: 10.01.2020

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 Administrator, Jhargram Municipality.
5. College Notice Board.
6. Sayntan Roy, Convener of web site Sub- Committee, Jhargram Raj College with a request to upload this tender notice in the College Website at the earliest.

Principal/Officer-in-Charge,  
Jhargram Raj College.

OFFICER - IN - CHARGE  
JHARGRAM RAJ COLLEGE

10/01/2020

Principal/Officer-in-Charge,  
Jhargram Raj College.

OFFICER - IN - CHARGE  
JHARGRAM RAJ COLLEGE

10/01/2020