

19.07.2013

TENDER NOTICE

Sealed tenders are invited for the supply of equipments and tools for setting up various labs and workshops, as scheduled below.

The Tenders will be opened at the office of Model Residential Polytechnic College, Kuzhalmannam in the Presence of such tenderer or their authorized representatives present at that time. Intending tenderer should quote the rate inclusive of all taxes. Principal, Model Residential Polytechnic College, Kuzhalmannam reserves the right to reject any tender without assigning any reason thereof. The College will also have the right to accept the rate quoted for any of the items in a tender and to reject the others.

- Withdrawals from the tender after it is accepted or failure to execute agreement will entail cancellation of the order forfeiting the EMD and supply being entrusted to another firm.
- No representation for enhancement of price one accepted will be considered.
- Any attempt on the part of tenderers or their agents to influence the officers concerned in their favour by personal canvassing will disqualify the tenderers.
- If any license or permit is required, tenderer must specify in their tender and also state the authority to which application is to be made.
- The rates quoted should be inclusive of all taxes, duties, cesses, etc. which may become payable by the contractor under existing or future laws.
- Payment will be made after performance evaluation by an officer entrusted by the Director, IHRD.
- Special Conditions if any, attended with the tenders of the tenderer will not be applicable to the contract unless the purchase expressly accepts them in writing.

Every tenderer should send along with their tender an EMD equal to 1% of the total quoted value in the form of DD drawn in the favour of the Principal, Model Residential Polytechnic College, Kuzhalmannam, payable in SBT Kuzhalmannam, If Government have exempted any firm from furnishing the EMD, they should produce relevant documents along with tender.

Application for the tender form should be accompanied by a cash remittance of cost of tender form with VAT fixed for a form and which is not refundable under any circumstances. Tender Forms can be had from the College office *on all working days till the date and time specified below for each*. The cost of tender forms should be paid by money order or in cash. Cheques, Postal Orders, Postage and Court Fee Stamps, etc. will not be accepted towards the cost of tender forms. **Rs. 50 /- as extra has to be remitted along with the cost of each tender form for sending the same by post.**

s/d

Principal

<i>Superscription</i>	:	Tender No P/46/2013/mrpckm dated 19.07.2013
<i>Last Date and Time of Sale of Tender Forms</i>	:	19.08.201, 2 PM
<i>Last date & Time for receipt of tender</i>	:	19.08.2013, 3 PM
<i>Date and Time for opening of tender</i>	:	19.08.2013, 3:30 PM
<i>Date up to which the rates are to be Firm</i>	:	6 Months
<i>Price of tender form</i>	:	Rs 900 /- + VAT @5% (Total Rs 945/-)
<i>Price of duplicate copy</i>	:	Rs 500 /- + VAT @ 5% (Total Rs 525/-)
<i>Address of officer from whom tender forms are to be obtained and to whom tenders are to be Sent</i>	:	<i>The Principal, Model Residential Polytechnic College, Kuzhalmannam P.O., Palakkad Dist., Kerala, PIN - 678 702</i>
<i>Name of Office</i>	:	<i>Office of the Principal, Model Residential Polytechnic College, Kuzhalmannam P.O., Palakkad Dist., Kerala, PIN - 678 702</i>
<i>Name and designation of the Purchasing Officer</i>	:	<i>The Principal, Model Residential Polytechnic College, Kuzhalmannam P.O., Palakkad Dist., Kerala, PIN - 678 702</i>
<i>Whether Samples essential</i>	:	<i>Demonstrate the items for conformation specifications and quality, on acceptance of your tender.</i>
<i>Period within which goods should be delivered</i>	:	<i>Within Two Weeks from the date of Supply order</i>
<i>Rates should be quoted for delivery</i>	:	<i>FOR at Model residential Polytechnic College, Kuzhalmannam.</i>
<i>Other special conditions</i>	:	<i>Terms of Guaranty/ Warranty should be clearly Specified</i>

SCHEDULE OF MATERIALS

Tender No **P/46/2013/mrpckm** dated **19.07.2013**

Carpentry Shop		
Sl No.	Description	Quantity
1	Surface planner with Circular saw 2 in 1 heavy duty Surfacing Capacity 6'inch Length of Surface Table 36'inch Rebating Capacity 1/2"inch Roller Speed (RPM) 4500 No. of Blades 2 Circular Saw Table Size 18 x 10" inch Up/ Down Movement of Table 3'inch Max. Circular Saw Diameter 8" inch Approx. Weight of Machine 120 kg	1
2	Carpentry vice 8" jaw with nuts and bolts	16
4	Metal Jack plane metal 10" with blade	12
5	Marking gauge 6"	12
6	mortise gauge 6"	12
7	Wooden mallet heavy 500 g	12
8	Handsaw (Rip saw) 18"	12
9	Coping Saw with frame 12"	6
10	Tennon saw 14"	12
11	Trisquire 12"	12
12	Trisquire 6"	12
13	Mortise chisel with handle 4mm	12
14	Mortise chisel with handle 6mm	12
15	Mortise chisel with handle 12mm	12
16	Mortise chisel with handle 20mm	12
17	Mortise chisel with handle 25mm	12
18	Firmer chisel with handle 6mm	12
19	Firmer chisel with handle 12mm	12
20	Firmer chisel with handle 20mm	12
21	Firmer chisel with handle 25mm	12
22	Firmer chisel with handle 32mm	12
23	Firmer chisel with handle 37mm	12
24	Firmer chisel with handle 50mm	12
25	Firmer chisel with handle 80mm	8

26	Firmer chisel with handle 100mm	5
27	Firmer chisel with handle 150mm	5
28	Pokker with handle	5
29	Bustard file 12" flat with handle	12
30	Bustard file 12" half round with handle	12
31	Cutting plier 6"	3
32	Double spanner set of 12 Nos.	1
33	Screw driver 4" to 18" heavy set	1
34	Folding scale 60cm wooden	12
35	Steel rule 30cm	12
36	G Clamp	8

Welding Shop		
SI No.	Description	Quantity
1	Welding table MS foot MS top With Flame guard top not less than 3mm1m wide 2m long 80cm height	3
2	Welding Transformer 300A variable type Orlikon or equal	2
3	Welding rod holder 500A	6
4	Welding Shield with dark plane glass	10
5	Welding helmet	3
6	Welding cable 500A	25Metre
7	Earth clamps	6
8	Welding gloves Pairs	6
9	Chipping hammer	6
10	Hacksaw frame 300mm solid	12
11	Welder fillet gauge	2
12	Trisquare 6"	6
13	Cold chisel 6x3/4"	5
14	Sledge hammer 4kg with handle	2
15	Sledge hammer 2kg with handle	2
16	Wire brush	10
17	Steel rule 30cm	12
18	Half round file rough with handle 12"	6
19	Flat file 12" rough	6
20	Smooth file 12" flat	6
21	Flat tong 18"	6
	Total	

Sheet metal shop		
SI No.	Description	Quantity
1	Metal sheet foot pedal shear machine Application Shear Metal Sheet Working Method Pedal Shear Raw Material PPGI/GI Cutting Blade Cr12 Quality Good Frame Cast Iron Use Before Roll Forming Machine Thickness 0.3-0.8mm	1
2	Hand shearing machine 12" blade	2
3	Hand solder Kodali type heavy	12
4	Electric soldering Iron 50W	6
5	Straight snips 12"	12
6	Straight snips 8"	8
7	Curved snips 12"	8
8	Curved snips 8"	8
9	G clamp small 3"	8
10	Hacksaw frame 12"	8
11	Spring compass 200mm	12
12	Spring divider 200mm	12
13	Centre punch 6"	10
14	Trisquare 250mm	12
15	Cold chisel 1" wide	12
16	Steel rule 60cm	12
17	Sheet gauge	5

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Fitting shop		
SI No.	Description	Quantity
1	Hand shearing and metal cutting machine 10 CH can be cut upto 32 mm steel / MS rod	1
2	Bench type pillar drill 12/13mm cap with bit Bench Type Pillar Drilling Machine <u>Capacitym.m.</u> Drilling in Steel 19 Drilling in C.I. 22 Tapping in steel 16 <u>Spindle</u>	1

	Spindle travel 125 Spindle taper MT-2 No. of spindle speeds 8 Range of spindle speeds 86-3360 <u>General</u> Size of Square Table 270x270 Size of Base Plate 550x315 Electric motor 1 Ph - 1 H.P. 1440 RPM 'V'-Belt Size A-43	
3	Bench grinder 8" double wheel Amps 4.2Amps Horsepower 3/4HP No Load Speed 3,600rpm Wheel Diameter 8" Spindle Diameter 5/8" Adjustable Tool Resets Yes Tool Length 16.0" Tool Weight 39.5lbs <u>Includes:</u> 36 grit wheel 60 grit wheel Eye shields Spark deflectors Tool rests Adjustment wrench	1
4	Electric hand drill heavy duty 1) Input power:300W / 380W 2) Speed: 0-3000rpm 3) Chuck capacity: 1.5 - 10mm 4) Drill capacity: a) Steel: 10mm b) Wood: 20mm	1
5	Power Hack saw machine 8" Size 8" Stroke 5.5" Stroke Per Minute 110 Power Reod. (In H.P) 1 Blade Size 16" Round Bar Cap. 8" Square Bar Cap. 6"	1

6	Bench vice 6" with bolts	12
7	Anvil 25 Kg.	4
8	Cold chisel 6mm,	12
9	Cold chisel 12mm,	12
10	Cold chisel 20mm,	12
11	Cold chisel 25mm	12
12	200g ball pane hammer with handle	12
13	400g ball pane hammer with handle	12
14	800g ball pane hammer with handle	8
15	Diamond chisel 20mm	12
16	Hacksaw frame 300mm	12
17	File with handle 12" round rough	12
18	File with handle 12" fine	12
19	File with handle 12" flat	12
20	File with handle 12" 1st cut	12
21	File with handle 12" 2nd cut	12
22	File Halfround 12"	12
23	File Halfround 12" fine	12
24	knife edge file 10"	8
25	Triangular file with handle 10"	8
26	Vernier caliper analogue 150mmx 0.05	8
27	VernierHight gauge Mitotoya 300mm	2
28	Screw gauge 0-25 mm Japan	8
29	Dial gauge with stand Japan	2
30	Universal surface gauge	4
31	Bevel protractor 12" ordinary	2
32	Double End spanner set of 12	2
33	Ring spanner set of 12	2
34	Box spanner set	1
35	Screw driver set 4" to 18" heavy	1
36	Tri square 8"	12
37	Tri square 6"	10
38	Steel Rule 30cm	12
39	Centre punch	6
40	Letter punch 6mm set	5
41	Figure punch 6mm	5
42	Spring compass 200mm	12
43	Spring divider 200mm	12
44	Outside/Inside caliper	12

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SCHEDULE OF MATERIALS

Tender No **P/71/2013/mrpckm dated 08.07.2013**

SL.No	Description of items	Qty
1	Liquid Limit Device, Hand Operated with casagrande grooving tool and gauge block	1 No.
2	Compaction Test apparatus for light compaction with Compaction mould 100mm ID, 127.3mm height 1000ml volume, Rammer 2.6kg x 310mm fall complete with Collar and Base plate made of Gun metal	1 No.
3	Core cutter. with Cylindrical Core Cutter made of steel 100mm dia x 130mm long Steel Dolly 25mm high and 100mm dia fitted with a lip, to enable it to be located on top of the Core Cutter , Rammer with Steel Rod	1 No.
4	Sand pouring cylinder apparatus With 100mm dia. And with Sand Pouring Cylinder fitted with Conical Funnel and Shutter, capacity 3 litre	1 No.

	- 1 No. , Cylindrical Calibration Container 100mm ID x 150mm height – 1No. , Metal Tray size 30x30x4cm, with 10cm central hole -1No.	
5	Shrinkage Limit set. With Porcelain Evaporating Dish , Shrinkage Dish , Glass Cup , Perspex Plate with three Metal Prongs , Perspex Plain Plate , Spatula, Glass Cylinder graduated 25ml x 0.5ml , Mercury 750g , Straight Edge.	1 No.
6	Plastic Limit Set comprising of glass plate, Brass Rod, Spatula, Moisture Tin & Porcelian Dish	1 No.
7	Hot air oven with Inner chamber – Aluminum, Outer – MS Powder Coated, Size – 450mm X 450mm X 450mm, with 2 shelves, Digital temperature Controller, Temp. range – 50°C to 250 °C, accuracy +/- 1 °C,	1 No.

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SCHEDULE OF MATERIALS

Tender No **P/52/2013/mrpckm dated 08.07.2013**

Physics lab

SI No.	description	Quantity
1	Verneir Caliper SS 125mm X 0.01 cm least count in box	5
2	Screw Gauge SS 0 – 20 mm X 0.01 mm in box	5
3	Meter scale wooden	5
4	Half meter Scale	5
5	Parallelogram force apparatus, wall pattern with 3 sets 5 X 50 gm	3
6	Inclined plane 60 X 10 cm with scale pan and physical wt. box 200 g	3
7	Sono meter teak wood with slotted wt. 5 X 500g	3
8	Metal Cylinder with different diameter for use with screw gauge set of 3	5

9	Rectangular metal block for measurement using caliper	5
10	Convex lens set with FL 5cm, 10cm, 15cm, 20cm, 25cm, 30cm	5
11	Concave lens set with FL 5cm, 10cm, 15cm, 20cm, 25cm, 30cm	5
12	Metallic lens stand	10
13	Metallic optic pin stand	10
14	Moment bar with hole at every 5 cm atand for suspension	5
15	Slotted weight iron CP 5 X 50g	5
16	Slotted weight iron CP 5 X 20g	5
17	Slotted weight iron CP 5 X 10g	5
18	Slotted weight iron CP 5 X 5g	5
19	Hook's Law apparatus with stand at 5 X 20 gm with mirror and pointer	5
20	Resonance column apparatus	5
21	Tuning fork set of 8	5
22	Rubber Hammer	10
23	Illuminated wire gauge	5
24	Stop clock Esal or equivalent	5
25	Pendulum stand with split cork clamp 25 mm bob	5
26	Ohm'Law set	3

Chemistry Lab

SI No.	description	Quantity
1	Electronic balance with Min weigh: 0.01g Power supply: AC220V, 50/60Hz, single phase Scale pan: diameter 13cm stainless steel Capacity: 500g Unit swift: Carat, ounces, pounds, g Certificate: ISO9001:2008, SGS... Accessories: 500g weight, windshield	1
2	Chemical Balance with 100 g wt. box	1

3	Beaker 100 ml	10
4	Beaker 1000 ml	5
5	Beaker 250 ml	12
6	Beaker 500 ml	8
7	Boiling Tube 25 X 150 BG	20
8	Burette 50 ml	20
9	Burette fisher clamp	30
10	Burette stand 7 X 5 X 24"	25
11	China Dish 3"	20
12	Conical Flask 100 ml	15
13	Conical Flask 250 ml	15
14	Dropper 6"	15
15	Dropper 8"	15
16	Dropping Bottle 30 ml	30
17	Measuring cylinder 10 ml	6
18	Measuring cylinder 100 ml	5
19	Measuring cylinder 1000 ml	2
20	Measuring cylinder 25 ml	4
21	Measuring cylinder 250 ml	3
22	Measuring cylinder 50 ml	4
23	Measuring cylinder 500 ml	3
24	Pipette 20 ml volumetric	20
25	Pipette stand Vertical Plastic	5
26	Reagent Bottle 125 ml	20
27	Reagent Bottle 125 ml wide mouth	20
28	Reagent Bottle 250 ml	20
29	Set of Graduated Pipette 10, 5, 2,1, 0.5, 0.2, 0.1 ml	4
30	Set of Volumetric Pipette 10, 5, 2, 1, ml	4

31	Spatula SS 6"	30
32	Spirit Lamp Screw Type	15
33	Test tube 15 X 125 mm	100
34	Test tube stand plastic	30
35	Thermometer 110C Zeal	4
36	Tripod 7"	15
37	Volumetric Flask 100 ml	20
38	Volumetric Flask 1000 ml	2
39	Volumetric Flask 250 ml	8
40	Volumetric Flask 500 ml	4
41	Wash bottle 500 ml	20
42	Weighing Bottle 100 ml	10
43	White tiles 6 X 6"	25
44	Wire gauge 6 X 6"	15

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SI No	Description	Quantity
1	Spectra photo Meter	2 Nos.
	Range	340 to 960 nm
	Resolution	0.1%T, 0.001 Abs, conc.1.0
	Output	%T: 0 to 100%, Abs; 0 to 1.999, Conc. 0 to 1999
	Detector	Silicon Photodiode
	Light Source	6V, 10W. I Tungsten Halogen Lamp
	Monochromator	600 Lines / mm holographic grating
	Sample Holder	10mm (10mm double tube holder facility available in Model SI-103)
	Spectral Bandwidth	10 nm
	Wave Length	5 nm
	Resolution	
	Wave Length Accuracy	+2.5 nm
	Repeatability	+2 nm
	Display	3 1/2 Digit LED Display
	Power	230V+ 10% AC 50 Hz
	Dimensions	L490xB300xH190 mm
	Weight	8.5 kg (approx.)
	Accessories	Cuvtte - 10mm (dia.) 10no, Dustcover, Manual,
2	Turbidity Meter	2 Nos.
	Principle	Nephelometric non-ratio/ISO7027 compliant
	Range	0 to 1000 NTU
	Automatic Selection	Range 0.00 to 9.99 NTU 10.0 to 99.9 NTU 100 to 1000 NTU
	Accuracy	±2 % of reading
	Repeatability	< ±1 % of reading
	Callibration	1 to 3 Points (automatic)
	Response time	< 6 Secs for full step change
	Sample Volume	30 ml
	Light Source	White light (tungsten) or infrared
	Operating Temperature	0 to 40 °C
	RS232 Output	Yes
	Accessories	Calibration kit set

Power requirement 230V AC

3 Water Quality Analyzer

2 Nos.

Enclosures: Readout & Probe
Temperature range: 0-45°C
Display & Programming: LCD/Keypad
Detectors: 3 detector assembly (T, Conductivity & Turbidity), separate pH & dissolved O2 probes

Probe- 0.30 lbs.
Cable: 2 meter
Voltage input- 230VAC
ADC: 16 bit (1 part in 65,000)
Cal: 2 point or multipoint
Logging- Auto or Manual with site # up to 7,000 data points
Keypad Controls

Cal- Sensor, Cal, Exit
Log- Auto, Manual, Setup, Exit
Incr/Decr- Move through menu, On/Off

Sensor Specs
pH: range 0-14 pH units with pH: 0.01 resolution & mV
Conductivity: 0-5 Conductivity: 0.00 mS with .01% FS Resolution
Dissolved O2 0-19.99 mg/L with a resolution of 0.01 mg/L
Temperature- 0- Temperature 100°C
Salinity 0-42 ppb, TDS- 0-5000 ppm

4 Desk top Digital pH Meter

3 Nos.

Range 0 - 14 pH
Resolution 0.01 pH
Impedance > 1012 ohms
Sensor Combination pH Electrode
Temp. Compensation Manual: 0 - 100 oC
Accuracy 0.01pH
Display 3 ½ Digit LCD
Power 230V AC

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<i>Whether Samples essential</i>	:	<i>Demonstrate the items for conformation specifications and quality, on acceptance of your tender.</i>
<i>Period within which goods should be delivered</i>	:	<i>Within Two Weeks from the date of Supply order</i>
<i>Rates should be quoted for delivery</i>	:	<i>FOR at Model residential Polytechnic College, Kuzhalmannam.</i>
<i>Other special conditions</i>	:	<i>Terms of Guaranty/ Warranty should be clearly Specified</i>

SCHEDULE OF MATERIALS

Tender No **P/47/2013/mrpckm** dated **08.07.2013**

SI No	Description	Quantity
1	TOTAL STATION	1 No.

Specifications

1	<i>Accuracy</i>	<i>7 second (Angular) 1.5mm+2ppm (Distance) with a measurement time of 2.5second or better</i>
2	<i>Least Count</i>	<i>0.1 second (Angular) and 0.1mm (distance)</i>
3	<i>Magnification</i>	<i>30 x or better erect image</i>
4	<i>Measurement Range</i>	<i>3500m with single prism under average atmospheric 3 seconds inline and 0.2 seconds in tracking. 30 (reflector less)</i>
5	<i>Display</i>	<i>Graphic LCD display on both sides with minimum resolution 1sec (Angular) and 0.001m (Distance) (minimum 150 x 250 pixels)</i>
6	<i>Key Board</i>	<i>Keyboard with user definable multi function trigger keys and function keys on both sides.</i>
7	<i>Onboard Functions</i>	<i>1) The instrument should have a function to calculate the level of a stationed point from the known target points in both faces.2) The instrument should have a function of Hidden Point to measure invisible points using hidden point rod.</i>
8	<i>Onboard application programs</i>	<i>Surveying, Stake out, Area and Volume with visible layout/ plan. Tie Distance, Reference line, Free Station, Remote Height and Construction.</i>
9	<i>Security system</i>	<i>The system should have inbuilt security system of locking the instrument with user definable PIN number to avoid the unauthorized use of the instrument.</i>
10	<i>Memory</i>	<i>At least 20000 fix points and USER Definable formats / ASCII/ GSI / landXML / dxf formats.</i>
11	<i>GPS Compatibility</i>	<i>Should be able to interchange data between GPS and Total station without any data conversion</i>
12	<i>Battery</i>	<i>Rechargeable Li ion battery for operation 8 hours minimum.</i>
13	<i>Compensator</i>	<i>Quadruple axis with ON and OFF facility with a setting accuracy of 2 or better.</i>

14	<i>Encoder</i>	<i>Absolute continuous and diametrical</i>
15	<i>Horizontal / Vertical Drives</i>	<i>System recommended to have endless drive i.e. to be free from all mechanical locks for vertical and horizontal movements.</i>
16	<i>Environmental</i>	<i>IP 55 for dust and splash and 95% non condensing Humidity.</i>
17	<i>Accessories</i>	<i>1 Machine with built in laser plummet</i>
		<i>2 Tribrach</i>
		<i>3 Tripod (wooden and telescopic)</i>
		<i>4 Poles – 2 Nos</i>
		<i>5 Prism with 3500m measuring range-2nos.</i>
		<i>6 Battery(Li ion – 2 nos.) and charger</i>
		<i>7 Required software for downloading exporting and importing to DXF and ASCII files.</i>
		<i>8 Data downloading cable and external memory device (CF Card/USB)</i>
		<i>9 Tool kit</i>
		<i>10 Compass</i>
18	<i>Guarantee</i>	<i>2 years (minimum)</i>

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<i>Superscription</i>	:	Tender No P/45/2013/mrpckm dated 08.07.2013
<i>Last Date and Time of Sale of Tender Forms</i>	:	08.08.201, 2 PM
<i>Last date & Time for receipt of tender</i>	:	08.08.2013, 3 PM
<i>Date and Time for opening of tender</i>	:	08.08.2013, 3:30 PM
<i>Date up to which the rates are to be Firm</i>	:	6 Months
<i>Price of tender form</i>	:	Rs 900 /- + VAT @5% (Total Rs 945/-)
<i>Price of duplicate copy</i>	:	Rs 500 /- + VAT @ 5% (Total Rs 525/-)
<i>Address of officer from whom tender forms are to be obtained and to whom tenders are to be Sent</i>	:	<i>The Principal, Model Residential Polytechnic College, Kuzhalmannam P.O., Palakkad Dist., Kerala, PIN - 678 702</i>
<i>Name of Office</i>	:	<i>Office of the Principal, Model Residential Polytechnic College, Kuzhalmannam P.O., Palakkad Dist., Kerala, PIN - 678 702</i>
<i>Name and designation of the Purchasing Officer</i>	:	<i>The Principal, Model Residential Polytechnic College, Kuzhalmannam P.O., Palakkad Dist., Kerala, PIN - 678 702</i>
<i>Whether Samples essential</i>	:	<i>Demonstrate the items for conformation specifications and quality, on acceptance of your tender.</i>
<i>Period within which goods should be delivered</i>	:	<i>Within Two Weeks from the date of Supply order</i>
<i>Rates should be quoted for delivery</i>	:	<i>FOR at Model residential Polytechnic College, Kuzhalmannam.</i>
<i>Other special conditions</i>	:	<i>Terms of Guaranty/ Warranty should be clearly Specified</i>

SCHEDULE OF MATERIALS

Tender No **P/45/2013/mrpckm dated 08.07.2013**

Sl No.	Description	Quantity
1	Vernier Transit Theodolite with 10 secs Erect Image, Blue coated lens, Achromatic Eyepiece Lenses, Optical Plummet System, Internal Focusing, Telescope Length 7", complete with tools in Wooden box & with Aluminum Telescopic Tripod made by die casting as per International Designing.	12 Nos.
2	Optical Square (Indian Type) wedge shaped hollow metallic box of 5cm sides and 3 cm deep with a handle 8cm long	6 Nos.
3	Distance Measuring Tapes conforming to relevant BIS code. Freeman's make or equivalent : Length – 30m,	8 Nos.
4	Cross staff :a) Open type metallic 100X100X150 mm iron leg painted at bottom, 1.5m length	15 Nos.
	b) French Cross Staff made of brass octagonal tube with teakwood pole 1.5m long	15 Nos.
5	Wooden Pegs Size 25mm x 25mm, Length 200mm including shoe, made of best seasoned wood - conforming to relevant BIS code	10 Nos.
6	Wooden mallets with fiber handle : a) 350 G	10 Nos.
	b) 500 G	10 Nos.
7	Prismatic Compass (100mm) made of brass or gun metal Circles: Aluminum graduated every 30 minutes Reading- Agate stone bearing with help of prism glasses & reflecting mirror packed in fiber case with sighting vane and rigid stand and ball socket arrangement with aluminum stand Conforming to BIS :1957-1961.	10 Nos.
8	Surveyor's Compass (100mm) Made of gun metal with metal circle graduated to full degree with two bubble and bar needle fitted with real agate stone to give very accurate bearing, supplied in fiber case with Aluminum stand having ball and socket head. Confirming to relevant BIS code.	5 Nos.
9	Survey Chains ; Conforming to B IS : 1492-1970, Made of 8 SWG Wire a) Metric chain – 20m	12 Nos.

	b) Metric chain – 30m	12 Nos.
10	Aluminum Leveling Staff - 4m, telescopic, 3 or 4 sections, Graduation 5mm in front in red & black on white ground graduation with push type locking system and iron shoe supplied in water proof canvas cover. Conforming to relevant BIS code.	12 Nos.
11	Chaining Arrow: Made of hardened steel wire dia - 4mm, making 50 mm dia circle at one end and pointed at other end, total Length -400 mm, Black enameled Conforming to relevant BIS code.	24 Nos.
12	Plumb bob: Made of brass carrot shape fitted with 1.52m water proof silk cord complete with suspension hook and grip washer. Confirming to relevant BIS code.	12 Nos.
13	Ranging Rods steel 2M Length, 25 mm dia.	24 Nos.
14	Dumpy Level with tripod stand	12 Nos.
	Unit of measure	360 degrees
	Magnification	26 X
	Leveling accuracy	1.6 mm at 30 m
	Working range	up to 100 m
	Dust and splash protection	IP 54
	Tripod thread	5/8"
	Operating temperature	.-10 – 50 °C
	Storage temperature	-20 – 70 °C
	Length	215 mm
	Width	135 mm
	Height	145 mm
	Weight, approx.	1,7 kg

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