

INVITATION FOR QUOTATION

TEQIP-III/2019/dced/Shopping/_____

11-Feb-2019

To,

WHOMSOEVER IT MAY CONCERN

Sub: Invitation for Quotations for supply of Goods

Dear Sir,

1. You are invited to submit your most competitive quotation (**in hard copy only**) for the following packages (**one quotation for one package**) with item wise detailed specifications given at Annexure I,

Sr. no.	Tender ID	Package Code	Package Name
1	TEQIP-III/2019/dced/Shopping/144	TEQIP- III/BH/dced/191	CIVIL P1
2	TEQIP-III/2019/dced/Shopping/145	TEQIP- III/BH/dced/192	CIVIL P2
3	TEQIP-III/2019/dced/Shopping/146	TEQIP- III/BH/dced/214	CIVIL P3 (Geotech Lab)
4	TEQIP-III/2019/dced/Shopping/147	TEQIP- III/BH/dced/215	CIVIL P4 (MT Lab)
5	TEQIP-III/2019/dced/Shopping/148	TEQIP- III/BH/dced/216	CIVIL P5 (TE Lab)
6	TEQIP-III/2019/dced/Shopping/149	TEQIP- III/BH/dced/217	CIVIL P6 (supporting items for geotech lab)
7	TEQIP-III/2019/dced/Shopping/150	TEQIP- III/BH/dced/226	CIVIL P7 (Survey Lab)

Note: Package wise detailed specification is attached (annexure –I) with this invitation letter and also made available on the institute website.

2. You must also submit the following information along with the bid.
 - i. Supplier Name:
 - ii. Address (with Pin Code):
 - iii. Contact person Name:
 - iv. Email ID:
 - v. Mobile No.
 - vi. GST No.
 - vii. PAN No.

3. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme [TEQIP]-Phase III** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
4. Quotation,
 - 4.1 The contract shall be for the full quantity as described above.
 - 4.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.
 - 4.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.
 - 4.4 Applicable taxes shall be quoted separately for all items.
 - 4.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
 - 4.6 The Prices should be quoted in Indian Rupees only.
5. Each bidder shall submit only one quotation **for one complete package**.
The bidder may submit separate quotation (as separate bid document) for each of the package advertised. The package wise detailed specification is available on the institute website <https://www.dce-darbhanga.org/> and also attached as annexure - I.
6. Quotation shall remain valid for a period not less than **55** days after the last date of quotation submission.
7. Evaluation of Quotations,

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

 - 7.1 are properly signed ; and
 - 7.2 confirm to the terms and conditions, and specifications.
8. The Quotations would be evaluated for all items together.
9. Award of contract:

The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

9.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

9.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

10. Payment shall be made in Indian Rupees as follows:

Delivery and Installation - 90% of total cost

Satisfactory Acceptance - 10% of total cost

11. All supplied items are under warranty of **minimum 12** months from the date of successful acceptance of items.

12. You are requested to provide your offer latest by **16:00** hours on **30-Mar-2019**.

13. Training Clause (if any): **Yes, as per the requirements of individual item that will be notified in PO while awarding the contract.**

14. Testing/Installation Clause (if any) **Yes.**

15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.

16. Sealed quotation to be send through speed/registered post/courier at the following address:

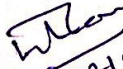
Darbhanga College of Engineering, Darbhanga, Mabbi, Post - Lal Sahpur, VIA - PTC, Darbhanga – 846005.

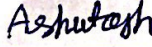
The Tender ID, Package code and Package name must be written on top of the envelop of the bid document.

17. **The bidder must mention the details of prior requirement for the installation and commissioning of the items quoted. A separate sheet with item wise requirements in a tabular form may be submitted.**

18. **Payment will be made only after the successful completion of set milestones and the adequate fund allocation from NPIU under TEQIP-III project.**

19. Principal, Darbhanga College of Engineering, Darbhanga, reserves the rights to accept the lowest or any tender and also of rejecting all or any tender without assigning any reason for the same.
20. The entire dispute with regard to the contract of purchase of items/packages will be subject to Legal jurisdiction of Darbhanga only.
21. The Dealer must have Annual Turnover of Rs. 1 (One) Crore or more for last 3 consecutive years. Copy of Balance Sheets and PL statements must be submitted with the Bid.
22. The Bidder / Authorised Dealer / Manufacturer whosoever is submitting the tender must have at least 3 years' experience of successful execution of contracts of similar nature to Central / State Govt. Departments / Organisations / Technical Institutions / TEQIP-III Institutions. Relevant Proofs (Order Copies) must be attached with the Bid.
23. The Bidder must have valid PAN / GST No., Copy of which must be attached.
24. The Bidder must submit last 3 years ITR.
25. The Bidder has to submit an Affidavit that his firm has not been blacklisted by State Govt. / Central Govt.
26. The Bidder must give warranty of at least 12 months of the products/items supplied.
27. The quotation submitted must contain mandatory information such as GSTIN, HSN code, Bifurcation of CGST & SGST, Taxable value and Invoice value, etc.
28. Preference will be given to:
 - The Bidders possessing relevant certification by an authorized body such as ISO etc.
 - The bids that have quoted the items certified for standard, quality and safety such as BIS, ISI etc.
 - The Bidders having dealer/supplier base in Bihar to prove its capability to provide after sales services as and when required.
29. We look forward to receiving your quotation and thank you for your interest in this project.


(Dr. A K Rai)
Principal – cum – IPD
TEQIP-III, DCE, Darbhanga


12/2/19

FORMAT FOR QUOTATION SUBMISSION

(In letterhead of the supplier with seal)

Date: _____

To:

Sl. No.	Description of goods (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (Amount in figures) (Rupees _____ amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of _____ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: _____

Address: _____

Contact No: _____

DARBHANGA COLLEGE OF ENGINEERING, DARBHANGA**CIVIL ENGINEERING DEPARTMENT****1. Package Name: CIVIL P1****Package Code: TEQIP- III/BH/dced/191****Geotechnical Engineering Lab**

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Cylindrical core cutter 100 mm dia and 130 mm long, steel dolly 25 mm high, rammer with steel rod, spatula etc.	02
2	Sand replacement method of field density Pouring cylinder fitted with conical funnel and shutter and a calibrating container. Available with 300x300x40 mm with 100 mm hole in the center.	03
3	Oven drying method Thermostatically controlled small size oven (temperature of $110 \pm 5^{\circ}\text{C}$), air tight container of 300 ml capacity (10 nos.)	01
4	Field identification of Fine Grained soils Pocket Knife, Small Spatula, Test Tube and Stopper (or jar with a lid), Hand Lens, wash bottle	03
5	Specific Gravity Apparatus Density bottle of 50 ml capacity with stopper having capillary hole, Wash bottle	05
6	Grain size distribution by Hydrometer Analysis Hydrometer, Glass measuring cylinder-1000 ml capacity (one nos.) with ground glass or rubber stoppers about 7 cm diameter and 33 cm high, Thermometer (one nos.), Water bath (one nos.), Stirring apparatus (one nos.), Centimeter scale (one nos.), Filter papers (one small packet), Wide mouth conical flask or conical beaker of 1000 ml capacity (one nos.), Thick funnel-about 10 cm in diameter (one nos.), Measuring cylinder-100 ml capacity (one nos.), Glass rod-about 15 to 20 cm long and 4 to 5 mm in diameter (one nos.).	03
7	Liquid limit device, Grooving tool, Mixing dishes, Spatula	05
8	Plastic limit determination: Porcelain dish, Glass plate for rolling the specimen, Air tight containers to determine the moisture content	10
9	Shrinkage limit and volumetric Evaporating Dish, Porcelain dish, Spatula, Shrinkage Dish. Non-corroding metal dish (3 nos.) 45 mm in diameter and 15 mm in height internally, Glass cup 50 to 55 mm in diameter and 25 mm in height, Glass plates two, each 75x75 mm one plate shall be of plain glass and the other shall have prongs.	03
10	Permeability test apparatus: Permeameter mould of non-corrodible material having a capacity of 1000 ml,	02

	with an internal diameter of 100 mm and internal effective height of 127.3 mm, the mould shall be fitted with a detachable base plate and removable extension counter. Compacting hammer of 50 mm diameter circular face, weight 2.76 kg and height of fall 310 mm. A bade with a porous disc, 12 mm thick. A suitable water reservoir. Graduated glass cylinder to receive the discharge, Stop watch to note the time, A meter scale to measure the head differences and length of specimen. I.S sieves 4.75 mm and 2 mm, Mixing pan, Trimming knife etc. stand pipe arrangements.	
11	Compaction test apparatus: Proctor mould having a capacity of 944 cc with an internal diameter of 10.2 cm and a height of 11.6 cm. The mould shall have a detachable collar assembly and a detachable base plate. Rammer: A mechanical operated metal rammer having a 5.08 cm diameter face and a weight of 2.5 kg and 4.5 kg.	03
12	Consolidation apparatus: Loading unit, maximum capacity 20 kg/cm ² , consolidation cells assembly, Fixed ring for specimens 60 mm dia x 20 mm thick with guide ring, Top and bottom porous stones for 60 mm dia specimen, Perforated pressure pad, Channeled base with water inlet and gasket, Flanged water jacket, water reservoir with plastic tube and pinchcock, Set of weights to give a pressure of 10 kg/cm ² on 60 mm specimen. Water reservoir with plastic tube, T-Connection and pinch cock Dial Gauge	03
13	Vane shear test: Torque applicator assembly capacity 2000kg/cm with split proving ring & dial gauge 0.002 x 5mm. Vane (with vane rod) 37.5mm dia x 75mm high 1 no., Vane (with vane rod) 50 mm dia x 100mm high, Torque rod (square cross section) 0.6mts long., Rods quick coupling type, 1 mtr. long, Rods quick coupling type, 1 ½ mtr. long, Dummy rod, corresponding to 37.5mm dia vane.	02

Material Testing Lab

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Autoclave Rust proof stainless steel pressure vessel & enclosure, Microprocessor based PID controller, Three fold safety mechanism, Reliable silicon rubber lid sealing gasket, Very Compact, Working Pressure : 21 ± 1kg / cm ² at 215°, Pressure Vessel: ID 150mm X Depth 500 mm, Weight : 70 Kg, Heater : 2000 Watts, Supply : 220V, 50Hz, 1 phase	01
2	Needle Vibrator Power: 2HP Electric vibrator	01
3	Cube Mould- 1 Stainless steel, 150 x 150 x 150 mm size split cube mould, 2 parts, With attach base, Made of cast iron, build up by four parts 45 degree wall, split type moulds	10

4	Cube Mould- 2 Stainless steel, 75 x 75 x 75 mm size with attach base, Made of cast iron	10
5	Cylindrical Mould Stainless steel, 300 mm high, 150 mm diameter, thickness 0.2 mm, consist of one tamping rod.	10
6	Beam Mould Stainless Steel, 150 x 150 x 500 mm Two standard sizes of Beam Moulds are offered for casting concrete specimens for flexural strength testing. These beam moulds are made of cast iron and are supplied complete with a base plate.	10
7	Le-Chatelier Apparatus Split cylinder 30 mm dia.x30 mm high of spring brass, two glass plates, one lead weight approximately 100 g.	05
8	Le-Chatelier Flask Flask height 243 mm, bulb of 90 mm dia., 250 ml capacity Used for finding specific gravity of hydraulic cement. Made of borosil glass. The long neck of the flask has at top a funnel of 50 mm diameter The neck has over-all 11 mm id upper portion is graduated from 18 ml to 24 ml with 1 ml graduation. Just at the bottom of the neck 1 ml capacity is marked in between there is 17 ml capacity bulb, Weight: 800, Power: Hydraulic,0.75Kw, Voltage: 380v	05

Transportation Engineering Lab

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Flash and Fire Point: Consisting of Flash cup brass with a insulated handle power supply, thermometer (300 ⁰ C) etc complete as per IS 1209(Part69)/ ASTM D-93	03
2	Softening point: Ring and Ball apparatus test apparatus electrically operated (Stirring Arrangement) with Borosil Beaker 600ml capacity, tapered rings, ball centering guides, steel balls (9.5mm dia), Stirring Rod and Heater. Suitable for Operation on 220V, Single Phase, 50Hz, AC Supply. IS 1205-1978 ASTM D-36	02
3	Bitumen Penetration Apparatus: Universal penetrometer. As per IS:1203, IS:310 (Part II) :IS:1208. Apparatus consists of a cart aluminium base with an iron stand on which moves an aluminium arm. A 6'' dial is fixed on this arm and a brass chromium plated rod to stick through the lower portion of the arm. Supplied complete with the adjustable needle holder, penetration needle sample container, transfer dish and weight of 50gm.	01
4	Viscosity test: The apparatus consists of stainless steel bath with oil cup which is centrally placed in a water bath. The bath has a lid which contains a water cooling tube,	03

	two handles with two stirring blades, thermometer socket and a straight heater. Stirring is done by turntable arrangement. A thermometer can also be inserted into the cup cover. Two jets one universal and one furol can be screwed to the cup by a handle (without strainer, withdrawal tube and glassware) The temperature is controlled by energy regulator or voltage varrier. (extra cost) Suitable to work on 220V, 50 Hz, AC single phase.	
5	Elongation Index: Consisting of a hard wood base with vertically mounted metal studs as specified in the IS 2386 (Part-I), BS 812.	10
6	Flakiness Index: Flakiness Gauge In compliance with IS: 2386.	10

Environmental Engineering Lab (Supporting Items requirement for environmental engineering lab)

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Porcelain Evaporating Dishes,	20
2	Imhoff cone	10
3	GFC filter Paper 0.44 micron	10
4	Glass rod	5
5	Volumetric Flask 1 ltr.	10
6	Volumetric Flask 500 ml	5
7	Volumetric Flask 100 ml	10
8	Volumetric Flask 50 ml	20
9	Erlenmeyer Flask 250 ml	15
10	Burette	20
11	Funnel	10
12	Beaker 2 ltr	5
13	Beaker 1 ltr	5
14	Beaker 100 ml	20
15	Beaker 250 ml	10
16	Measuring Cylinder 250 ml	10
17	Measuring Cylinder 100 ml	10
18	Measuring Cylinder 50 ml	10
19	Pipette 5 ml	10
20	Pipette 10 ml	10
21	Pipette Bulb	1 Packet
22	Reagent bottle 500 ml	20
23	Crucible	20
24	BOD bottles	25
25	Dhrum Tubes	20
26	Petri Dishes	20
27	Glass beads	1
28	Reagent bottle 1000 ml	2
29	Magnet bar	20

30	Reagent bottle 250 ml	20
31	Wash bottle 500 ml	10
32	Burette stand with clamp	15
33	Aspirator bottle	3
34	Funnel Holder	15
35	Test tube stand (Having 5 rows)	5
36	Analytical Balance	1
37	Distillation Plant	1
38	Thermometer	2
39	Electric heater	1
40	Filtration Flask	10
41	Desiccators (Dia. 300 mm)	1 Packet
42	Vacuum Pump	2
43	Filter Assembly	2
44	Conical Flask (250 ml)	20
45	Conical Flask (150 ml)	20
46	COD Vials 15 ml	15
47	Test Tubes with stand	1 packet
48	Pipette Box	1

2. Package Name: CIVIL P2

Package Code: TEQIP- III/BH/dced/192

Fluid Mechanics Lab

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Utube Manometer Casing: M.S. /Aluminum Casing from three sides and aluminium cover with the transparent acrylic front. - Packing : Teflon / Neoprene - For Glass Tube : 250 - 0 - 250 mm , 750 - 0 - 750 mm	02
2	Digital Barometer (range: 350 to 1100hpa) Digital Altimeter range: -2296ft to 29500ft, Resolution-1 meter or 3 ft Digital Clock: 2 time zones, 12/24 hours	02
3	Stability of Floating Body Size: 300x300 mm, Water Tank Size: 550 x 500x 400 mm (approx.)	02
4	Venturimeter Line Size: 100 mm to 800 mm. Accuracy: +/-0.25% to +/-3.0%. Flow coefficient value: 0.98 for all ratios of diameter.	02
5	Flow Visulization Actual viewing area: 500 mm x 700 mm., Dye tank with flow control, Dye injection system, Piping Flow control valve and by pass valve.	02

3. Package Name: CIVIL P3 (Geotech Lab)

Package Code: TEQIP-III/BH/dced/214

Geotechnical Engineering Lab

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	G.I Sieves: 80 mm, 40 mm, 20 mm, 10 mm, 4.75 mm, pan and cover (set)	02
2	Brass Sieves: 4.75 mm, 2.36 mm, 1.18 mm, 600 micron, 300 micron, 150 micron, 75 micron, pan and cover (set)	02
3	Triaxial Test Apparatus (Digital) Standard IS: 2720 (Part XI & XII) Loading pad made of Perspex for 38mm dia specimens, Pair of plain discs made of Perspex 38 mm dia 6 mm thick, Pair of porous stones 38 mm dia specimen, One dozen rubber sheaths for 38 mm dia samples One plastic drainage tube, TRIAXIAL CELL, For strain measurement 0.01mm x 25mm travel, Complete with 12 nos rubber membranes, 4 nos sealing ring, mould for preparation of sample, drainage tube.	01
4	Direct Shear Test Apparatus Capacity 2kN – 50 kN, Standards IS :11229, 2720 (Part 13) Loading Unit with V-strips, Loading yoke, Fixtures for proving ring, brackets for holding consolidation and strain dial gauges and manually operated lead screw for application, Shear box assembly for square specimen size 60 x 60 x 25mmTwo halves of shear box of 2 Plain gripper plates, 2 Perforated gripper plates, 2 Porous stones, Top loading pad	01
5	Proctor mould (capacity 944 cc)	05
6	Mixing Pan (Aluminium or stainless steel medium size)	05
7	Permeability mould Metallic Mould, 100 mm dia x 127.3 mm height, 1,000 ml volume	02

4. Package Name: CIVIL P4 (MT LAB)

Package Code: TEQIP-III/BH/dced/215

Material Testing Lab

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Compression Testing Machine 500 capacity Electrically cum manually (hand) operated fitted with three load gauges, Accuracy Grade: 1, Voltage: 210-220V	01
2	Slump Cone Apparatus Material: Steel Standard: ASTM C143/C143M/ ASTM C192/ AASHTO T119 Height: 12 inches (30 cm) The slump cone having dimension as (ID-100mm at top ID- 200mm at bottom & length 300mm), testing rod & base plate.	01
3	Universal Testing Machine Capacities from 100 kN to 2000 kN. Designing standard as per ASTM, Structure comprising paint-coated aluminium blanking plate, Continuous roll autographic "Load Vs Elongation" recorder, Suitable for testing a wide range of metallic materials, Mechanical Extensometer, Load-Stabilizer, Attachments for Brinell test, Tensile test for shouldered & threaded, Single & Double shear test, Bolts-Nuts & Washer test, Rope test, Flat Belt test, Bend-Rebend test, 180° Bend test, Pull-Out test, etc. are available, Capacities from 100 kN to 2000 kN, Analogue Models, Loading accuracy well within $\pm 1\%$, conforms to IS:1828 / BS:1610.	01
4	Brass Sieve 90 micron meter	04
5	Curing Tank Capacity 24/48 cubes of 150mm/70.6mm size	01

5. Package Name: CIVIL P5 (TE LAB)

Package Code: TEQIP-III/BH/dced/216

Transportation Engineering Lab

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	<p>California bearing ratio (C.B.R.) test apparatus equipped with all accessories.</p> <p>Loading jack with u bracket, capacity 50kN (5,000 kgf) lift of 50mm. Single speed 1.25mm / min, screw jack fitted with a U-bracket. A hexagonal adapter is provided to fix a proving ring. A thrust bar, which passes through the U-bracket, is screwed on to a proving ring. Swivel Head, for the loading jack. Detachable handle of around 150mm radius.</p> <p>Penetration Piston, 102mm dia threaded at the upper end, to connect to the various lengths of extension sleeves. Made of metal (non-rusting material) of circular cross section having a diameter of 49.63 ± 0.13 mm. Penetration rate 1.27 mm/min</p> <p>CBR Mould, Zinc plated steel mould of cylindrical shape having 150mm internal diameter and 175mm height are supplied with an extension collar of 51 mm height and perforated base-plate (1.6mm dia. hole). Each set consists of 6 molds.</p> <p>Ball seating attachment are use for testing over undulating ground to ensure jack, load measuring ring and penetration piston are truly vertical.</p> <p>Datum Bar Assembly, consisting of two tripod stands and 1 m long datum bar.</p> <p>Connector set, consists of eight connectors for coupling the penetration piston and proving ring assembly.</p> <p>Adjustable Bracket, for mounting the dial gauge</p> <p>Annular surcharge weight, (Metallic & galvanized) 2.5 kg, 147 mm dia with 53 cm dia slot. Each set consists of 6 annular surcharge weights.</p> <p>Slotted Metal weight, (Metallic & galvanized) 2.5 kg, 147 mm dia with 53 cm dia central hole. Each set consists of 6 slotted surcharge.</p> <p>Conversion frame, mechanical jack for laboratory CBR test a frame 45 kN.</p> <p>Expansion measuring apparatus, swell plate of 149.2 mm diameter and is perforated with 1.6mm diameter holes. This item is supplied along with tripod fitted with dial gauge. Each set consists of 6 nos. of swell-plates and 2 nos. each of tripods & dial-gauges.</p> <p>Spacer disk, Circular galvanized spacer disk of 152 mm diameter and 61.5 mm height. Each set consists of 1 spacer disk</p> <p>Slotted Metal weight, 10kg , 215mm to 250mm dia with 53 mm dia slot 2 Nos</p>	01

6. Package Name: CIVIL P6 (Supporting item for geotech lab)

Package Code: TEQIP-III/BH/dced/217

Geotechnical Engineering Lab (Supporting Items requirement for geotechnical engineering lab)

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Volumetric Flask 25 ml	5
2	Volumetric Flask 50 ml	5
3	Volumetric Flask 100 ml	5
4	Volumetric Flask 250 ml	5
5	Volumetric Flask 500 ml	5
6	Volumetric Flask 1000 ml	10
7	Volumetric Flask 2000 ml	5
8	Volumetric Flask 50 ml	20
9	Linear Shrinkage Mould	10
10	Desiccators (small size)	5
11	Spatula	10
12	Measuring Cylinder (plastic) 100 ml	5
13	Measuring Cylinder (plastic) 250 ml	10
14	Measuring Cylinder (plastic) 500 ml	10
15	Measuring Cylinder (plastic) 1000 ml	15
16	Measuring Cylinder (glass) 1000 ml	2
17	Whatman Filter paper (packet)	5

7. Package Name: CIVIL P7 (Survey Lab)

Package Code: TEQIP- III/BH/dced/226

Surveying and Geomatics Lab

Sr. No.	Detailed specification of the instruments / equipment	Quantity
1	Metric Chain(30 m) 30m length chain. Tallies are fixed at every five-meter length and brass rings are provided at every meter length except where tallies are attached.	02
2	Metric Chain(20 m) 20 m length chain .Tallies are fixed at every five-meter length and brass rings are provided at every meter length except where tallies are attached.	02
3	Gunter Chain 66 feet, Measuring chain, Each link is joined by two steel rings. A tally of brass is attached at every tenth link. Two links about 405 mm long.	02
4	Revenue Chain Revenue chain with 16 links and of length 33 ft	02
5	Invar Tape Invar is an alloy of nickel (36%) and steel. The width of tape is 6 mm. length 30 m	02
6	Measuring Tape 50 Meter Fiber Plastika Measuring Tape, High Tensile Strength, Can Withstand Over 2Kg (4.41Lbs) Of Tension. Non-Conductive, Water Resistant And Easy To Clean, Durable Winding Mechanism, A Bolder Print Ensuring Easy Readability Of The Scale. Specially Designed Winding Handle For Smooth Winding Action. Case Fits Comfortably	02
7	Measuring Tape 7.5 m , width 25 mm, Carbon Steel, ABS, PVC Size: 103 x 35 x 84 mm	02
8	Wooden pegs Made of wood 40mm square by 50cm long	50
9	Mallet wooden Made of iron and wood	04
10	Arrow (Metal) Arrows are made of steel wire of diameter 4mm and their ends are bent into a circle where red cloth is tied to facilitate visibility	25
11	Cross staff Open Type Brass 6" With Steel Pole	04
12`	Optical Square Consists of Brass / suitable metal hollow box having open face about 6 x 3 cms. and closed face about 2 x 3 cm with a brass handle about 8cm. in length. Circular type made up of brass & fitted with double reflecting mirror right & left to 90.	04

13	<p>Plane table with all accessories</p> <p>A table top, similar to drawing board fitted on to a tripod is the main instrument. Alidade, Plumbing fork with plumb bob., Spirit, level brass, Trough compass, Drawing sheets and accessories for drawing, Carrying Bag for Board, Brass Head & plate, Sight vane , Plumbing Fork, Plumb Bob., Plane Table Board: 600X750X 16 mm</p>	02
14	<p>Prismatic Compas with tripod</p> <p>Made of brass with aluminum ring, engine divided to read 30 minutes with fine agate centre, well magnetized needle, automatic lifter and prism reading, hinged coloured shades and reflector packed in fiber case with tripod stand having ball and socket head made of aluminium.</p>	04
15	<p>Dumpy Level with tripod and staff</p> <p>Internal focusing telescope having 3 foot screws leveling base with locking arrangement, diaphragm etched on glass with Stadia 1:100, screw focusing eye piece, highly sensitive spirit bubbles, aperture not less than 3.76 cm. Magnification 38 X, fitted with magnetic compass having PRISMATIC reader. with Aluminium Folding Stand</p>	02
16	<p>Direct reading transist theodolite 2" with tripod</p> <p>Telescope length 178 mm with focusing screw fitted with eye piece, glass diaphragm with Stadia 1:100, Horizontal Circle 4.5" dia. and Vertical Circle 4" dia. at reading edge. Graduated to read opposite Vernier up to 20 Second, totally enclosed,dust and water proof.</p>	02
17	<p>Line Ranger</p> <p>Light Source 1310+/- 20nm LD, Dead Zone of Reflection Event 5m, Power Supply 3V~6V, Operated Temperature 0~40 Deg C, Storage Temperature - 10~60 Deg C, Humidity 0~85%Non-condensing</p>	05