

مولانا آزاد نیشنل اردو یونیورسٹی

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MAULANA AZAD NATIONAL URDU UNIVERSITY

(A Central University established by an Act of Parliament in 1998)

Hyderabad

MANUU Poytechnic Darbhanga Off Campus

No: MANUU/Poly/DBG/MO/R4/04/2016-17

Date:06.03.2017

Cost of tender document: **Rs. 4,000/-** through DD in favour of MANUU payable at Hyderabad  
(exemption of Tender cost will be considered on production of documentary proof).

**TENDER DOCUMENT**

**TO SUPPLY AND INSTALL TOOLS AND EQUIPMENT OF SURVEYING  
PRACTICE LAB, ADVANCED SURVEYING PRACTICE LAB, MATERIAL  
TESTING LAB, HYDRAULICS LAB AND AUTOCAD LAB FOR MANUU  
POLYTECHNIC DARBHANGA OFF CAMPUS**



*Last date & time of submission of technical and financial bids* : 28.03.2017.  
at 1:00 p.m.

*Date and time of opening of technical bids* : 28.03.2017  
at 2:00 p.m.

## Chapter-I : Instructions to the bidders

1. **Preface:** Maulana Azad National Urdu University (MANUU) is a Central University with headquarter at Hyderabad and other campuses, colleges and Regional Centres located all over India. The University intends to procure best quality equipments from the reputed firms only as decided by the University.
2. **Call for tender:** MANUU invites sealed tenders from original manufacturer / Govt. organizations / authorised dealers / reputed firms to supply and install best quality equipments for the university off campus Darbhanga. This is tender cum rate contract initially for a period of one year. The requirement mentioned in the tender may be spread over a period of one year and will be procured accordingly.
3. **Submission of tender:** The sealed tenders are invited for supply and installation of Tools and Equipment of Surveying Practice Lab, Advanced Surveying Practice Lab, Material Testing Lab, Hydraulics Lab and Auto cad Lab for MANUU Polytechnic Darbhanga Off campus of the University at Darbhanga Bihar under **two bid system** viz. 1) **Technical bid** (*Annexure-II A, B, C, D &E categories of trades*) *duly signed and stamped, consisting all technical details along with commercial terms and conditions and relevant documents, tender cost and EMD. The details of tender cost and EMD are given at S.No.6/Chapter-II: Terms & Conditions.* 2) **Financial bid** (*indicating items-wise price for each category of the respective trade category in Annexure-III for A, B, C, D&E. These two separate sealed covers should be kept in a third envelope on which it should be super scribed 'Tender for supply and installation Tools and Equipment of Surveying Practice Lab, Advanced Surveying Practice Lab, Material Testing Lab, Hydraulics Lab and Autocad Lab for MANUU Polytechnic Darbhanga off campus' addressed to The Principal MANUU Polytechnic, Chandanpatti, Laheriasarai, Darbhanga-846001, Bihar.*
4. **Quoting of items:** The vender may quote for all the items / part of items of Annexure-II A to B and should agree to accept the part supply order as per the criteria of lowest bid for each item GOI rules will be considered. Unit prices are to be quoted both in figures and in words. In case of discrepancy, price quoted in words or figures whichever is less will be taken as valid.
5. **Opening of bids:** The Technical bids will be opened and scrutinized; the firm, who meets the basic requirement as per documents furnished, may be invited for full fledge display / demonstration. The committee of the University may visit the firm / show room items supplied at other organizations to ascertain the quality. The University may also ask the firm to submit the samples before opening of financial bid / execution of order. The University may shortlist and considers only three to four best quality equipments firms. The University will not bear any expenses for presentation of samples. The financial bid will be opened for those firms who qualify technically and whose sample has been agreed up to the satisfaction level of the University. The decision of the University will be final in this regard.
6. **Selection of firm:** The lowest quoted firm will be selected on item wise basis subject to satisfaction of the quality of the product. The decision of the committee will be final in this regard.
7. **Alteration in the bid:** Bidders will not be permitted to alter or modify their bids after expiry of the deadline of receipt of bids.

8. **Availability of tender form:** The tender document can be had from Purchase Section/Principal Office MANUU Polytechnic Darbhanga on furnishing of DD (non refundable) of Rs 4,000/-. Alternatively, tender document can be downloaded from the University's web site ([www.manuu.ac.in](http://www.manuu.ac.in)). If downloaded, the DD drawn on *MANUU, Payable at Hyderabad* towards the cost of tender document for the required amount should be enclosed with the Technical bid.
9. **Cost:** The rates quoted should be inclusive of all taxes, levies, freight, insurance, transportation, installation etc. Rates are to be quoted in the financial bid as per tender document (Annexure-III A, B, C, D, E), else it shall not be considered. The element of taxes is required to be shown separately and distinctly.
10. **Offices location:** The firm should have its office in and around Bihar region to provide service after sale and to furnish the addresses of Service Centre with telephone number along with technical bid. The bidder may be required based on necessity to supply items to MANUU campus, colleges etc all over India at same rate basis.
11. **Repair and maintenance:** The firm selected will be required to undertake the repair and maintenance as and when required or at a regular intervals. The firm has to identify one single point for effective services and to attend within 24 hours from the time of booking the complaint.
12. **Validity period of quotation:** Firms tendering should note that their offers should remain open for acceptance up to 120 days; if the 120<sup>th</sup> day falls on holiday then last date will be the next working day from the date of opening of tender.
13. **Acceptance of tender:** The University does not pledge itself to accept the lowest or any tender and reserves to itself, the right to accepting the whole or any part of the tender or rejecting completely.
14. The tender cost/EMD will be exempted for the firms registered with MSME, NSIC, NCCF, Kendriya Bhandar or any Govt. Agency concerned as per GoI norms on submission of documentary proof along with the bid.

## Chapter-II: Terms and Conditions

1. **Rejection of tender:** The conditional tenders, unsigned bids, without required EMD and cost of tender form (if downloaded form is used) shall not be accepted and any query / intimation will not be entertained on such bids.
2. **Specification:** The desired specifications and allied technical details are placed at Annexure-I A, B, C, D&E. If required the same may be amended / up graded at the time of placing purchase order. These are basic specifications; the firm may quote the same or higher specifications as per enclosed Annexure only.
3. **Technical bid:** The technical bid must mention the specifications as per the Annexure-II A, B, C, D&E and indicate that the firm is ready to supply items of the required specifications or upgraded by mentioning "Yes / No" in against each item. The firm has to quote as per the required specifications. However higher configuration / technically up graded can be considered by the University. Detailed specifications, catalogue / literature, of all the items quoted may be supplied with the technical bids. Incomplete Bid / in

adequate specification etc., in any respect are liable to be rejected. In case, the firm intends to supply the item with a different specification, it should be specified invariably. The firm should do indicate the make / model / manufacturer of the item against each item.

4. **Date and place of submission of form:** The technical and financial bids should be submitted to the Principal, Maulana Azad National Urdu University Polytechnic, Darbhanga-846001, Bihar. by **1:00 p.m.** on 28.03.2017. Tenders received after due date and time will not be considered. The technical bid will be opened on the same day at **2:00 p.m.** in presence of vendors or their authorized representative. The representative should bring the authorization letter from their vendor for attending the tender opening committee meeting.
5. **Bid security / EMD:** The Bid security / EMD for the required amount depend upon the category of trades chosen for the furnishing the quotations ranging from Rs.4,830/- to Rs.21,200. The D.D. of EMD (refundable) drawn in favour of MANUU, Hyderabad, payable at Hyderabad should be enclosed with the Technical bid (The DDs of tender cost and Bid security/EMD shall not be clubbed). The Security bid of the successful bidder will be converted into Security Deposit and will be returned without interest after successful completion of warranty period / after submission of Bank guarantee / supply of items. Further, in case any firm is L-1 in some of the items, then the firm will be required to deposit the bid security / EMD amount equal to 10% amount of P.O. and the full bid security / EMD amount will be returned without interest. The cost of tender form and security bid / EMD amount is as follows:

1.	<p><b>Tender cost for the categories of trades chosen for furnishing the quotations for all category of trade</b></p> <p>(i) Annexure-III (A) : Rs. 500/-                      (ii) Annexure-III (B) : Rs. 1,000/-                      (iii) Annexure-III (C) : Rs. 1,000/-                      (iv) Annexure-III (D) : Rs. 5,00/-                      (v) Annexure-III (E) : Rs. 1,000/-</p> <p>.....</p> <p>All categories of trades : Rs.4,000/-</p>
2.	<p><b>Bid security / EMD for the category of trades chosen for furnishing the quotations (Annexure-wise)</b></p> <p>(i) Annexure-III (A) : Rs. 4,830/-                      (ii) Annexure-III (B) : Rs. 60,360/-                      (iii) Annexure-III (C) : Rs.70,480/-                      (iv) Annexure-III (D) : Rs. 18,460/-                      (v) Annexure-III (E) : Rs. 21,200/-</p> <p>.....</p> <p>All categories of trades : Rs.175,330/-</p>

Note: Exemption of Tender Cost/EMD will be considered as per GOI rules on submission of documentary proof.

6. **Company profile:** The bidders must submit their company profile, make / brand of the items etc. supplying. A list of organizations / agencies to which items have been supplied previously may be submitted along with copies of supply order, and enclosed to technical bid.
7. **Bidders shall have to meet the following pre-qualification criteria:-**

- a) Should have achieved the Average Annual Turnover of 30% of the value for which the Quotations are furnished, during the last three years.
- b) In addition to this, the firm should have achieved any one of the following criteria, during the last 7 years.
- c) (i) Should have supplied three purchase orders of the similar products worth 40% of the value for which the quotations are furnished  
**or**  
(ii) Should have supplied two purchase orders of the similar products worth 50% of the value for which the quotations are furnished.  
**or**  
(iii) Should have supplied one purchase order of the similar products worth 80% of the value for which the quotations are furnished.
8. **Repeat order:** This is a tender cum rate contract for a period of one year and the item offered in the tender can be re-ordered at the same rate, terms & conditions within a period of twelve (12) months.
9. Orders of different organizations booked during the last two years preceding may be attached.
10. **Delivery and Installation:** The firm shall deliver the software and equipments at MANUU Polytechnic, Chandanpatti, Laheriasarai, Darbhanga-846001, Bihar of the University and install the same within **30 days** from the date of issue of Purchase Order.
11. **Warranty:** All the items should be with onsite comprehensive warranty for a minimum period of one year (as per OEM warranty period, whichever is later) after satisfactory installation and acceptance by the University. The firm should repair / replace the faulty items free of cost during the warranty period.
12. The firms should submit OEM/authorization certificate specific to this open tender or copy of authorized dealership Certificate.
13. **Payment terms:** No advance payment will be considered, The payment will be released in Indian rupees in the following order:
- (i) **90% payment against purchase order:** on satisfactory supply and installation of the material. The remaining 10% cost would be released on submission of performance Bank Guarantee for the equal amount from a scheduled Bank with the vaility upto 60 days beyond the warranty period. If the firm fails to furnish Bank Performance Bank Guarantee, the 10% cost would be retained by the University till the Tender obligations are completed.
14. **Quantity:** The quantity mentioned in the tender can be increased or decreased at the discretion of the University and the decision of the University shall be final in all respects.
15. **Quality:** All steel parts shall be given antirust treatment and shall be coated with epoxy powder.

16. **Registration:** The firm should be registered with the government agency for sales tax and service tax, incometax, , incorporation and the certificate of registration issued by appropriate government authority for required items to enclosed.
17. **Submission of Integrity Pact:** The selected firm may be required to furnish the Integrity Pact as per the office Memorandum No.14 (12)/2008-E-II (A) dated 19.07.2011, Ministry of Finance, Government of India; the form is available with the University.
18. **Right of the University:** The University reserves the right to reject or accept any tender without assigning any reason or cancel before issuing Purchase Order. In case of cancellation of the tender the EMD will be returned without interest.
19. **Acceptance of terms and conditions:** All pages of the tender document are to be signed and stamped by the tendering firm as agreed by the terms and conditions of the tender and to be attached along with the technical bid.
20. **Penalty clause:** The supply and installation of items has to be completed within stipulated time period indicated in Purchase Orders, in case of delay the University reserves the right to impose penalty, as follows:
  - (i) **Liquidated Damages:** If the firm fails to supply and install the items of desired quality and quantity or part of it or unable to perform the service within specified periods for reasonable cause, the University shall, without prejudice to its other remedies under the contract / order may deduct from the contract price, as liquidated damages, a sum equivalent to 2% per week of the value of undelivered service of the goods or unperformed services limited to a maximum of 10% value of the purchase order / left over cost. Once the maximum is reached, the University may consider termination of the contract / order without any notice and further serious action may be initiated. Late supply to the maximum of 10% will be deducted from the bill after which the order will remain cancelled and Bid Security / Earnest Money deposit will be forfeited.
  - (ii) **Termination for default:** The University may, without prejudice to any other remedy for breach of contract / order, by written notice of default sent to the firm, terminate the contract / order in whole or part at the risk and cost of the defaulting firm.
    - (a) If the firm fails to execute the supply of all the material specified in the order with in the period(s) of desired quality and quantity specified in the order, or within any extension therefore granted by the University, or
    - (b) If the supplier fails to perform any other obligation(s) under the contract / order.
    - (c) If any defects are observed in the items, the University will have the right to reduce the payment to be made to the firm and take any other suitable action against the firm, and the University decision will be final in this regard.
21. **Settlement of Dispute:** In case of any dispute, Darbhanga will be the Jurisdiction and the Registrar, Maulana Azad National Urdu University, Hyderabad shall decide the issue and his decision will be final and shall be binding on the parties as per following terms:

- (i) The Purchaser and the Supplier shall make every effort to resolve by direct negotiation any disagreement or dispute arising between them under or in connection with the contract.
- (ii) If the parties have failed to resolve their dispute of difference by such consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to settle the issue by arbitration, as herein provided, as to the matter in dispute. No arbitration in respect of the matter be commenced unless such notice is given in accordance with this clause for the final settlement of the matter. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.
- (iii) All questions, disputes and differences arising shall be referred by the Vice Chancellor, MANUU to the sole arbitrator for arbitration under the provision of the Arbitrations and Conciliation Act, 1996.

22. **Obligation during Arbitrations:** Notwithstanding any reference to arbitration (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and (b) the Purchaser shall pay any amount due to the Supplier.

Place: Hyderabad  
Date: 06.03.2017  
Hyderabad

Sd/-  
**Registrar**  
Maulana Azad National Urdu University

- Encl:** (i) Annexure –I (A to E) (Specification: 19 pages)  
(ii) Annexure-II (A to E) (Technical bid:7 pages)  
(iv) Annexure-III(A to E) (Financial bid: 8 pages)

**Chapter – III: Requirement and specification of the all items**

**Annexure – I (A)**

**(i) Surveying Practice Labs Technical Specification Equipment:**

Sl. No.	Items	Item Specification	Qty Reqd.
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1.	Metric Chains and arrows	As per ISI specifications having 4 mm Dia made of Galvanised Mild Steel-150 links, 30 mtrs length with 10 arrows	05
2.	Measuring Tape	Fibre Glass Type-30 mtrs (ISI)	06
3.	Measuring Tape	Fibre Glass Type-15 mtrs (ISI)	04
4.	Cross staff	Aluminium staff moulded cross along with round metal rod top thread for fixing	02
5.	Cross staff	Open Cross Staff head with metallic pole	02
6.	Cross staff	French Cross Staff	02
7.	Ranging rod	Ranging rod made of Iron pipe packed in canvas cover 32 mm diameter (length 2m in single rod)	25
8.	Ranging rod	Ranging rod made of Iron pipe packed in canvas cover 32 mm diameter (length 3m in single rod)	25
9.	Surveyors Compass	1 degree resolution and 1/2 degree accuracy Made of brass body circle graduated to full degree with two bubble and bar type needle fitted with real agate stone end rigid tripod stand with fiber case as per BIS.	03
10.	Pegs	Made of Iron, 30 cm long , coss sectional area 2x2cm, one end pointed.	25
11.	Optical Square	As per ISI specifications	01
12.	Levelling Staff	Folding Type 5 meter leveling staff ( As per IS 1779- 1961), Aluminium Levelling Staff Telescopic with Canvas cover.	05
13.	Vernier Transit Theodolite	Theodolite 20 sec. erect image suitable for measuring horizontal, vertical angles, with optical plummet 2.5X, Focusing range 0.5 m, Erect image, 30X coated optic Shortest/Longest measuring distance 1.5 m/300 mt. Graduated circle 360° Vernier reading 20" Objective aperture 40 mm, Complete in box with standard accessories and tripod stand of aluminium.	03
14.	Umbrella	Survey Umbrella minimum 2 mtr. dia with steel pole.	20
15.	Iron Hammer	1 Kg	10
16.	Plumb Bob	Made of Brass. Medium size	16
17.	Walky Talky	1 set	05

Place: Hyderabad

Date: 06/03 / 2017

Sd/-

**Registrar**  
Maulana Azad National Urdu University  
Hyderabad

**Annexure – I (B)**

**(i) Requirement and specification of Advanced Surveying Practical Lab Equipment  
in Tender:**

Sl. No.	Items	Item Specification	Qty Reqd.
1.	Total Station	<p><b>ANGLE MEASUREMENT</b>  Least Count.  0.5second.or better  Angle Accuracy  1 Second  Method  Absolute, Continuous, Diametrical.</p> <p><b>TELESCOPE</b>  Telescope Magnification /  Resolving Power  30X  Field view  1°2'- 1°30'  Focusing Distance  1000 meter or better  Auto-Pointing facility with prism  1000 meter</p> <p><b>DISTANCE MEASUREMENT WITH PRISM</b>  Using Long Range EDM  Minimum  5.0 km with single prism and Long Range up to 7.5km or more  Accuracy  1.0 mm ± 2 ppm XD or better  Lesser output in Prism mode  Cass 1</p> <p><b>WITHOUT PRISM</b>  Range Minimum  1000 meter or better  Lesser output without prism  Class 1/2/3R</p> <p><b>MOTOR DRIVE SYSTEM</b>  Mechanism  Both horizontal and vertical movement  Speed  180 degree/sec or more</p> <p><b>MEMORY</b>  Internal Memory  1GB  External Memory  Onboard Slot for USB pen drive supported upto 32GB  Bluetooth , Wireless, Class 1, 150m  Data Formats (On Board)  GSI/DXF/Land XML/CSV/user definable  ASCII formats</p> <p><b>PROGRAMMES INBUILT</b>  <b>Graphical Intuitive Application</b></p>	01

		<p><b>Programs</b> Set Station and Orientation</p>	
2.	Total Station	<p><b>ANGLE MEASUREMENT</b> Least Count. 1sec. or better Angle Accuracy 5 Second Method Absolute, Continuous, Diametrical. <b>TELESCOPE</b> Telescope Magnification / Resolving Power 30X Field view 1°20' - 1°30' Focusing Distance 1000 meter or better Auto-Pointing facility with prism 1000 meter <b>DISTANCE MEASUREMENT WITH PRISM</b> Using Long Range EDM Minimum 4.0 km with single prism and Long Range up to 7.5km or more Accuracy 2.0 mm ± 2 ppm XD or better Lesser output in Prism mode Cass 1 <b>WITHOUT PRISM</b> Range Minimum 500 meter or better Lesser output without prism Class 1/2/3R <b>MOTOR DRIVE SYSTEM</b> Mechanism Both horizontal and vertical movement Speed 180 degree/sec or more <b>MEMORY</b> Internal Memory 500 MB or more External Memory Onboard Slot for USB pen drive supported upto 32GB Bluetooth , Wireless, Class 1, 150m Data Formats (On Board) GSI/DXF/Land XML/CSV/user definable ASCII formats <b>Operating System</b> Windows CE</p>	01

		System should run onboard on Win CE 6.0	
3.	Electronic Theodolite	<p><b>Telescope</b>  Objective aperture  45 mm  Magnification  30x  Image  Erect  Resolving power  3.5 sec.  Field of view  1 Degree 30 minute  Minimum focus  0.9 m</p> <p><b>Angle measurement</b>  Display unit  Degree / Gon / Mil selectable  Display resolutions  1" /5" (0.3mgon /1mgon )  0.001m/0.01m  Accuracy  2"  Measuring mode H  Dual  V  Dual  Automatic compensator  Work range 3'</p> <p><b>General</b>  Interface  RS-232C/USB  Sensitivity of levels Plate level  30" / 2mm  Circular level  8' / 2mm  Optical plummet  Image:Erect,Magnification:3x,Min. focus:0.5m,Field of view:5°  Operating temperature  (-20 C ±45 C)</p> <p><b>Power Supply</b>  Battery  Rechargeable Lithium Ion Battery  – 2Nos. Should be supplied along with Instrument  Operating time  20hours</p> <p><b>In Built Memory</b>  Capable to store more than 10,000 points</p>	05

		<b>Standard accessories should be supplied.</b>	
4.	Auto Level with Tripod Stand	<p><b>Telescope</b> Objective aperture 42 mm Magnification 32x Image Erect Resolving power 3" Minimum focus distance 0.3 mtrs</p> <p><b>Compensator</b> Magnetic damping system Working range More than <math>\pm 15'</math> Sensitive of Circular Level 10/2 mm Setting Accuracy 0.3" Water Protection IPX6 or better</p> <p><b>Accessories</b> Aluminum Telescopic Tripod 1 No. Aluminium Bar code staffs 2 Nos. of 5 mtrs Length Dust cover, Tool kit, carrying case and all relevant manuals should be supplied with instruments.</p>	03
5.	Auto Level- Digital	<p><b>Telescope</b> Objective aperture 36 mm Magnification 28x Image Erect Resolving power 3.5" Field of view 1'30" Minimum focus distance 1.5 mtrs Stadia: Multiplication constant Additive constant</p> <p><b>Compensator</b> Magnetic damping system Working range More than <math>\pm 15'</math></p>	05

		<p>Sensitive of Circular Level 10'/2 mm</p> <p><b>Power Supply</b> Operating Voltage 7.2 V DC Rechargeable Battery Lithium-ion Rechargeable type Operating Time 8 hrs or more Battery Charger Quick type</p> <p><b>Data Storage</b> 2000 sets of points or more Data Download USB Cable (From Instrument to computer)</p> <p><b>Display</b> LCD Type</p> <p><b>Accessories</b> Aluminum Telescopic Tripod 1 No. Aluminium Bar code staffs 2 Nos. of 5 mtrs Length USB Data transfer Cable 1no. Dust cover, Tool kit, carrying case and all relevant manuals should be supplied with instruments.</p>	
6.	GPS Device	<p>Unit Dimensions 4.4"x 2"x1.2"</p> <p>Display Size 1.1"x 2.1"</p> <p>Display Resolution 64x128 pixels</p> <p>Weight 150 gm with batteries (approx)</p> <p>Batteries 2AA batteries</p> <p>Water Proof Required</p> <p>Way Points 500 (approx)</p> <p>Routes 20 (approx.)</p> <p>Battery Life 17 Hrs approx.</p>	05
7.	GPS Device	<p>Unit Dimensions 4.2"x 2.2" x1.2" (10.7x5.6x3.0) cm</p> <p>Display Size</p>	05

		<p>1.3"x 1.7"                  Display Resolution                  176x220 pixels                  Weight                  150 gm with batteries                  Batteries                  2AA batteries                  Water Proof                  Required                  High Sensitivity Receiver                  Required                  USB                  Required                  Base Map                  Required                  Way Points                  1000 (approx)                  Routes                  50 (approx.)</p>	
8.	Tablet Note Taker	<p>Coverage Area                  Upto A4 page                  Resolution                  100 DPI                  Standards                  Meets CE and FCC  <b>Dimension and Weight</b>                  Digital Pen                  133mm(L), 14.5 mm(D)                  Weight                  16 gm                  Receiver Unit                  67 mm (L), 30 mm (W), 13 mm                  (H)Weight                  60 gm (approx.)</p>	05
9.	Note Taker 2 <sup>nd</sup> Generation	<p>Description                  Specifications                  Coverage Area                  Upto A4 page                  Resolution                  100 DPI                  Standards                  Meets CE and FCC                  Communication                  USB  <b>Dimension and Weight</b>                  Digital Pen                  133mm(L), 14.5 mm(D)                  Weight                  16 gm                  Receiver Unit</p>	05

		67 mm (L), 30 mm (W), 13 mm (H) Weight 80 gm (approx.)	
10.	Tablet Mobile Note Taker	Uses standard paper - no special paper required Stores up to 50 A4 pages Includes LCD to view and confirm input Operates both in mobile mode and when connected to PC, notebook or other device Connects to PC/Notebook via USB cable (included) Includes software for synchronization and management of stored files Writes directly into MS Office applications (in Connected mode) Allows file transfer over LAN, email, and instant messaging application (in Connected mode).	05

Place: Hyderabad

Date: 06/03 / 2017

Sd/-  
**Registrar**  
Maulana Azad National Urdu University  
Hyderabad

**Annexure – I (C)**

**(i) Requirement and specification of Material Testing Lab Equipment in Tender:**

Sl.	Items	Item Specification	Qty Reqd.
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No.			
1.	Slump Test Apparatus with Tamping rod	As per ISI specifications- i) A slump cone 100 mm dia at the top, 200 mm dia at the bottom, and 300 mm high with two cleats and lifting handles. ii) A base plate with clamping arrangement for the slump cone and a swivel handle which also serves as the datum for measuring the slump. iii) A tamping rod 1.6 cm dia and 60 cm long with one end rounded and graduated from 0 to 15 cm in 0.5 cm spacing to measure the slump.	05
2.	Plastic bucket	10 Litre Capacity	05
3.	Gauging Trowel	Specified shape and dimensions with straight edges and a wooden handle. 200 mm Long Blade and Weight 210 + 10g.(As per IS: 4031)	02
4.	Gauging Trowel	The trowel blade of 140 to 150 mm long with straight edges and a wooden handle. Weight of 210 + 10g.(As per IS: 4031)	02
5.	Standard Test Sieves (8"dia)	200 mm dia, Spun Brass Frames, Size : 90 Micron, IS Sieve No. 9	05
6.	Nylon or Pure Bristle Brush	For cleaning Sieves	05
7.	Sample Trays	made of G.I., Size 300 x 300 x 50 mm	05
8.	Sample Trays	Sample Tray (Enamel Tray) Size 450 X300 X 40 mm	05
9.	Graduated Measuring Cylinder	Made of Plastic, 1000 ml. capacity	05
10.	Pycnometer	The apparatus consists of a glass jar of 1 kg capacity, complete with brass cone, rubber seal and screwed cap. .	05
11.	Non Absorbing Mixing Pan	Size 3'x 3'	01
12.	Vernier Calipers		05
13.	Dot Punch		05
14.	Hammer	Ball Pin , 0.5 Kg	05
15.	Measuring Scale	Made of Steel, 1 meter long.	05
16.	Stop Watch	Digital type	05
17.	Scale	Made of steel, 30 cm long	10
18.	Electric Oven	Laboratory Electric Oven, with Digital Indicator Cum Controller with Safety Alarm, range 50° to 250°C +/-1°C with Air Circulating Fan, S.S. Inside Size 450 x 450 x 450mm	01
19.	Vibrating Machine	The machine is used for compaction of 70.6 mm cube	01

		<p>specimens of cement mortar under standard vibration required for determination of compressive strength of cement. The vibration machine consists of a frame mounted on four coiled springs to carry a cube mould and an eccentric revolving shaft mounted in ball and roller bearings.</p> <p>The machine is so balanced that the eccentric imparts simple harmonic motion to mould carrier and the mould.</p> <p>The frequency of vibration is 12000 <math>\pm</math>400 per minute. The drive from the motor to the eccentric shaft is through an endless flat belt running on crowned pulleys. Suitable for operation on 220 V, 50 Hz, single phase supply. Supplied complete with a time switch, one 70.6 cm I.S.I. marked cube mould (HC42.10.1) with hopper.(As per IS specification)</p>	
20.	Sieve Shaker	<p>Sieve Shaker, Motorised, with Built-in Digital Timer, A digital timer adjustable from 0-99 minutes is incorporated as an integral part of the equipment. The Sieve Shaker can carry upto 8 sieves of 20cm dia. It is driven by a ¼ HP geared motor. The Sieve Table is inclined from the vertical axis and the direction of inclination changes progressively in the clockwise direction. In addition to the gyratory motion of the table, there is a tapping motion as well. Vibration pads 4 Nos. Suitable for operation on 220 V, 50 Hz, Single Phase, AC supply.</p>	01
21.	Aggregate Impact Test Apparatus	<p>with Automatic Blow Counter (IS: 9377-1979) consists</p> <ol style="list-style-type: none"> <li>i) A heavy circular base with two vertical guides fitted with a cross bar at the top.</li> <li>ii) A hammer of 13.75 kg mass which can be raised and allowed to fall freely through 380 + 5 mm with locking arrangement.</li> <li>iii) A cylindrical cup, a metal measure and a tamping rod 10 mm</li> </ol>	01

		dia x 230 mm long	
22.	Electronic Weighing Balance	Capacity- 6 Kg, Accuracy- 0.1 gm, Pan Size 290 X 210 mm.	01
23.	Compaction Factor Apparatus	as per IS specification, for determination of concrete mixes of very low workability such as those normally used with concrete, compacted by vibration. Concrete mix having maximum size of aggregate not exceeding 40 mm, can be tested for workability. Compaction Factor Apparatus is complete with hoppers and receiver assembly, Tamping Rod of 16 mm dia x 600 mm long having a Hooper and two trowels.	01
24.	Standard Test Sieves (12" dia)	300 mm dia, Made of Brass frame in course series. Sieves of Size - 80, 63, 40, 20, 16, 12.5, 10., 4.75, 2.36, 1.18, 0.60, 0.30 , 0.15, 0.075 mm with Collecting Pan	01
25.	Sand Pouring Cylinder Apparatus	100mm Dia. Ref. Standard IS:2720 (Part 28) Sand Pouring Cylinder fitted with Conical Funnel and Shutter, capacity 3 litre. Cylindrical Calibration Container 100 mm ID x 150 mm height. Metal Tray size 30 x 30 x 4 cm, with 10 cm central hole 1 No.	02
26.	Digital Weighing Balance	Capacity- 30 Kg., Accuracy-1 gm, Mini Table Top with front and Rear Display, Pan Size 200mm X 250mm	01
27.	Adaptor	For 20 cm Dia Sieves for Sieve Shaker	01
28.	Adaptor	For 30 cm Dia Sieves for Sieve Shaker	01
29.	Stop Watch	Digital 0.1 sec.	05
30.	Soaking Tank	Container for soaking Bricks	05
31.	Sample Tray	Made of G.I., 650 X 650 X 50 mm size	05
32.	Thickness Gauge	IS:2386(part1)-1963,Used for determining the Flakiness Index of aggregates. It consists of a panel having accurately cut slots of different standard lengths and widths.	05
33.	Length Gauge	IS : 2386 (part - 1) 1963, for determining the elongation index of coarse aggregate. It consists of a	05

		metal plate on which 8 steel pins are vertically mounted with specified distances in between. This assembly is mounted on a hardwood base.	
34.	Cube Mould (70.6mm)	(70.6x70.6x70.6)mm size, Made of cast iron, with I.S.I Mark IS : 10080-1982	06
35.	Cube Mould (100 mm)	(100x100x100) mm size, Made of cast iron with ISI Mark IS : 10080-1982	06
36.	Cube Mould (150 mm)	(150x150x150) mm size, Made of cast iron, with I.S.I Mark IS : 10080-1982	06
37.	Cylindrical Mould	Made of cast iron, size-150 mm dia. x 300 mm ht.	06
38.	Computerized Universal Testing Machine	<p><b>Computerised Universal Testing Machine (1000kN)</b>  <b>Complete set with computer, printer &amp; software.</b></p> <p><b>UTM Specifications:</b>  Capacity (kN) : 1000 with hydraulic gripping.  6 pillar/Column type Load frame for 1000kN.  Resolution: 0.01kN  Clearance for Tension test (mm) : 50 to 700 ±150  Clearance for compression test (mm) : 0 to 700 ±150  Ram Stroke (mm) : 250  Piston speed at no load (mm/min) : 0 to 50 ±30  Clearance between columns (mm) : 650 ±10  Connected Load (K.W.) : 3.5  Voltage : 400-440  Phase : 3  Standard Accessories supplied with the machine  For Tension  Clamping jaws for round specimens(mm): (10-25) ± 04  Clamping jaws for flat specimens (mm): 0 – 40 ± 20  Width (mm) of specimen: 70 ± 5  For Compression:  Diameter of plates (mm): 220 ± 30  For Transverse:  Diameter of rollers (mm): 50  Length of Rollers (mm): 140 ± 30</p>	01

39.	Izod Impact testing Machine (Pendulum Impact Tester)	<p>Max. span between the rollers (adjustable) (mm): 700 ± 100</p> <p><b>Other technical specifications</b></p> <ul style="list-style-type: none"> <li>- 8 bit processor with multiprocessing facility</li> <li>- LCD Panel with 4x20 characters</li> <li>- Printer facility</li> <li>- Key board with 16 keys</li> <li>- A direct PC connection using RS232 port connected with D9 connector</li> <li>- Flash memory of 512 KB</li> <li>- Serial to USB converter with 10,000 bits/sec. transmission facility</li> <li>-Key board has the following programmable facilities             <ul style="list-style-type: none"> <li>- The START key includes information on the mode of test, pace rate, load and peak load</li> <li>- The STOP key includes the facility of saving data of the test conducted.</li> </ul> </li> <li>- <b>1 no. of Single and double shear set up for mild steel</b></li> </ul> <p><b>Computer</b></p> <ul style="list-style-type: none"> <li>-Intel i3 Processor,</li> <li>- 320 GB HDD, 2GB RAM, DVD R/W drive,</li> <li>- Key Board, Optical Mouse, 6USB Ports</li> <li>- 17" TFT Screen,</li> <li>- Deskjet colored Printer</li> <li>- UPS 500VA</li> </ul> <p><b>Application Software</b></p> <p>User friendly Software would be provided with the system to acquire and plot data online and then analyze the various result parameters.</p> <p>Salient features of the software</p> <ul style="list-style-type: none"> <li>• Windows based &amp; user friendly</li> <li>• Saving &amp; Retrieving of Test Files</li> <li>• On line display of Load &amp; Displacement</li> <li>• Start &amp; Stop operation for acquiring data</li> <li>• Online Plot of Load v/s Displacement Graph</li> <li>• Display of recorded Data on the Screen</li> </ul>	01
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		<ul style="list-style-type: none"> <li>• Storing of Data in Numeric form</li> <li>• Calculation of various parameters (Tensile Strength, Young's Modulus, Yield Stress, Ultimate Stress, Max. Strain etc.).</li> </ul>	
40.	Rockwell cum Brinell Hardness Testing Machine	<p>standards &amp; conforms to BS , IS Specification.</p> <p><b>Technical Specification :</b>  Tests Parameters : Charpy / Izod  Initial potential energy (joules) :- 300/ 170  Minimum scale graduation :- 2 /2  Pendulum drop angle (Degree):- 140/ 90  Impact velocity (m/sec):- 5.308 /3.994  Distance between axis of rotation and centre of strikes (i.e. length of pendulum) (mm):- 813.5 /813.5  Effective weight of pendulum (kg) :-21.300 /21.300  Max total friction and windage losses (% of initial potential energy) :-0.5%/ 0.5%  Striking edge :  Angle at tip (Degree) :-30/ 75  Radius of curvature (mm):- 2 /0.7  Width of tip (mm) :-18  Horizontal relief (Degree) :- 10(IZOD)  Vertical relief (degree) :-5(IZOD)  Test Piece Supports  Suitable for specimen (Max) (mm) :-10 x 10 /10 x 10  Distance between supports (mm) :- 40 (+ 0.5, - 0.0) (CHARPY)  Taper of support (mm):- 11 + 1 (CHARPY)  Radius of curvature at edge (mm) :-1 to 1.5 (CHARPY)  Overall size (mm) approx 760 (L) X 440 (W) X 1925 (H)  Net Wight (kg) approx 425..  Standard Accessories :</p> <p>Charpy Striker :-1 NO  Izod striker :-1 NO  Combined Charpy / izod (10 x 10 specimen) support Block :-1 NO  Specimen setting Gauges ( for Charpy and izod) :-2 NOs  Set of spanners :-1 Set</p>	01



Sl. No.	Items	Specifications	Qty Reqd.
1.	Bernoulli's theorem apparatus (with technical manual)	Compact, robust & stand-alone setup comprising of the following (but not limited to): 1. Inlet tank of suitable capacity 2. Supply Tank (optional) of suitable capacity 3. Measuring Tank of suitable capacity fitted with Piezometer Tube & Scale 4. Piezometer Tubes: Material P.U. Tubes (suggested) 5. Pump: A 220 volt AC, 0.5 HP, single phase monoblock ISI pumpset (suggested) with suitable pipe fittings, strainer foot valve, and switch 6. Piping: GI / PVC Size BSP (suggested) 7. Stop Watch: Electronic 8. Sump Tank of suitable capacity Floor Area: Limited to 2 x 1 m	01
2.	Discharge over notches apparatus (with technical manual)	Compact, robust & stand-alone setup with self – contained water re-circulating unit (suggested) provided with a centrifugal pump and comprising of the following (but not limited to): 1. Channel Test Section: Size 600x250x180 mm (suggested) 2. Notches: Material Brass a. Rectangular Notch b. 45 deg. V Notch c. 60 deg. V Notch d. Trapezoidal Notch 3. Hook / Pointer: With Vernier Scale 4. Water Circulation: FHP Pump (of reputed brand with ISI specifications) 5. Flow Measurement: Using Measuring Tank of suitable capacity with Piezometer. 6. Sump tank of suitable capacity 7. Stop Watch: Electronic 8. Control Panel: On/Off Switches, Main Indicator etc. Floor Area: Limited to 2 x 1 m	01
3.	Orifice and mouthpiece apparatus (with technical manual)	Robust apparatus designed to measure the co-efficient of discharge of orifice & mouthpiece, comprising of the following (but not limited to): 1. Supply Tank - 0.4 X 0.3 X 0.5m height (suggested) 2. Orifice - 8mm, 10 mm and 12 mm (suggested) 3. Mouthpiece (a) L/D = 1, 2.5 and 4 (suggested) (b) Bordas mouthpiece (c)	01

		<p>Converging diverging mouthpiece.                      4. X-Y gauge for orifice jet co-ordinates.                      5. Measuring tank of suitable capacity.                      6. Sump tank of suitable capacity.                      Floor Area: Limited to 3 x 2 m</p>	
4.	Venturimeter Apparatus for flow measurement	<p>Venturimeter - 13 mm (Mild Steel with Painting)                      • Block Type Acrylic Differential Manometer (250-0-250 mm)                      • Flow control valve to change Discharge.                      • Transparent pizometer tubes with scale to measure measuring tank discharge.                      • Measuring tank- 295 X 345 X 345 mm                      • Sump tank- 900 X 350 X 350 mm                      • Stop clock.</p>	01

Place: Hyderabad

Date: 06/03 / 2017

Sd/-  
**Registrar**  
 Maulana Azad National Urdu University  
 Hyderabad

**Annexure – I (E)**

**(i) Requirement and specification of Hydraulics Lab Equipment in Tender:**

Sl. No.	Items	Specifications	Qty Reqd.
1	AutoCAD Civil (3D) Software with License for 05 systems	AutoCAD Civil (3D) Software with License for 05 systems	01

Place: Hyderabad

Date: 06/03 / 2017

Sd./-  
**Registrar**  
Maulana Azad National Urdu University  
Hyderabad

**Chapter-IV: Technical Qualification :**

**Annexure-II**

1.	Name of the firm	
2.	Details of Tender Cost	

*Open Tender No. MANUU/Poly/DBG/MO/R4/04/2016-17*

	Details of Tender Cost (for Surveying Practical Lab) (Annexure-III-A)	Rs. 5,00/- D.D. No. _____ dated: _____ Bank _____
	Details of Tender Cost (for Surveying Practical Lab) (Annexure-III-B)	Rs. 1,000/- D.D. No. _____ dated: _____ Bank _____
	Details of Tender Cost (for Material Testing Labs) (Annexure-III-C)	Rs. 1,000/- D.D. No. _____ dated: _____ Bank _____
	Details of Tender Cost (for Hydraulic Lab Equipment) (Annexure-III-D)	Rs. 5,00/- D.D. No. _____ dated: _____ Bank _____
	Details of Tender Cost (for AutoCad Lab Software) (Annexure-III-E)	Rs. 1,000/- D.D. No. _____ dated: _____ Bank _____
<b>Note: Exemption of Tender Cost/ EMD will be considered on production of documentary proof</b>		
3.	Details of EMD (Bidders may submit combined/consolidated DD for the Annexures they intends to participate/quote)	
	Details of EMD (for Surveying Practical Lab) (Annexure-III-A)	Rs. 4,830/- D.D. No. _____ dated: _____ Bank _____
	Details of EMD (for Surveying Practical Lab) (Annexure-III-B)	Rs. 60,360/- D.D. No. _____ dated: _____ Bank _____
	Details of EMD (for Material Testing Labs) (Annexure-III-C)	Rs. 70,480/- D.D. No. _____ dated: _____ Bank _____
	Details of EMD (for Hydraulic Lab Equipment) (Annexure-III-D)	Rs. 18,460/- D.D. No. _____ dated: _____ Bank _____
	Details of EMD (for AutoCad Lab Software) (Annexure-III-E)	Rs. 21,200/- D.D. No. _____ dated: _____ Bank _____
4.	<b>Contact Details</b>	Postal Address ..... ..... ..... Tel No. Land Line Mobile: E-mail:
5.	<b>Details of Registration with income tax and sales tax authorities</b> <i>Enclose Copy / proof</i>	
6.	<b>Original Manufacturer/Government Organization/ authorized dealers/reputed firm/authorization certificate specific to this tender</b>	
7.	<b>PAN Details</b> <i>Enclose Copy / proof</i>	
8.	<b>Documentary proof for Pre Qualification Criteria as mentioned in the Tender (Sl. 7, Chapter II)</b>  1) Average turnover for the last 3 years .....  2) Proof of documents against Chapter-II, Sl.7, b(i) or b(ii) or b(iii) .....	
9.	<b>Any other relevant information</b>	
<b>Optional:</b>		
10.	<b>Customer List with nature of work done (Enclose a list of minimum 10 customers)</b>	

**Declaration:** It is hereby declared that the firm have carefully read and understood the tender and **agreed with all the clauses**, terms and conditions of the tender, Darbhanga jurisdiction etc and agreed that the decision of the University shall be final in all respect.

*Authorized signature of  
the firm along with seal*

Place

Date:.....2017

**Chapter-IV: Technical bid:** To be utilized by the firm to indicate that agreed to supply the item wise.

**Annexure-II (A)**

**(i) Surveying Practice Labs Equipment:**

Sl. No.	Items	Qty Reqd.	Make & model	Agreed by firm (Yes / No)
1.	Metric Chains and arrows			
2.	Measuring Tape			
3.	Measuring Tape			
4.	Cross staff			
5.	Cross staff			
6.	Cross staff			
7.	Ranging rod			
8.	Ranging rod			
9.	Surveyors Compass			
10.	Pegs			
11.	Optical Square			
12.	Levelling Staff			
13.	Vernier Transit Theodolite			
14.	Umbrella			
15.	Iron Hammer			
16.	Plumb Bob			
17.	Walky Talky			

Place:

Date: 2017

Authorized signature of the firm along with seal

**Annexure-II (B)**

**(i) Requirement and specification of Advanced Surveying Practice Lab Equipment:**

<b>Sl. No.</b>	<b>Items</b>	<b>Qty Reqd.</b>	<b>Make &amp; model</b>	<b>Agreed by firm (Yes / No)</b>
1.	Total Station	01		
2.	Total Station	01		
3.	Electronic Theodolite	05		
4.	Auto Level with Tripod Stand	03		
5.	Auto Level- Digital	05		
6.	GPS Device	05		
7.	GPS Device	05		
8.	Tablet Note Taker	05		
9.	Note Taker 2 <sup>nd</sup> Generation	05		
10.	Tablet Mobile Note Taker	05		

Place:

Date:

2017

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the firm along with seal

**Annexure-II (C)****(i) Requirement and specification of Material Testing Lab Equipment:**

Sl. No.	Items	Qty Reqd.	Make & model	Agreed by firm (Yes / No)
1.	Slump Test Apparatus with Tamping rod	05		
2.	Plastic bucket	05		
3.	Gauging Trowel	02		
4.	Gauging Trowel	02		
5.	Standard Test Sieves (8"dia)	05		
6.	Nylon or Pure Bristle Brush	05		
7.	Sample Trays	05		
8.	Sample Trays	05		
9.	Graduated Measuring Cylinder	05		
10.	Pycnometer	05		
11.	Non Absorbing Mixing Pan	01		
12.	Vernier Calipers	05		
13.	Dot Punch	05		
14.	Hammer	05		
15.	Measuring Scale	05		
16.	Stop Watch	05		
17.	Scale	10		
18.	Electric Oven	01		
19.	Vibrating Machine	01		
20.	Sieve Shaker	01		
21.	Aggregate Impact Test Apparatus	01		
22.	Electronic Weighing Balance	01		

23.	Compaction Factor Apparatus	01		
24.	Standard Test Sieves (12" dia)	01		
25.	Sand Pouring Cylinder Apparatus	02		
26.	Digital Weighing Balance	01		
27.	Adaptor	01		
28.	Adaptor	01		
29.	Stop Watch	05		
30.	Soaking Tank	05		
31.	Sample Tray	05		
32.	Thickness Gauge	05		
33.	Length Gauge	05		
34.	Cube Mould (70.6mm)	06		
35.	Cube Mould (100 mm)	06		
36.	Cube Mould (150 mm)	06		
37.	Cylindrical Mould	06		
38.	Computerized Universal Testing Machine	01		
39.	Izod Impact testing Machine (Pendulum Impact Tester)	01		
40.	Rockwell cum Brinell Hardness Testing Machine	01		
41.	Beam Deflection Test Set up	01		

Place:

Date: 2017

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the firm along with seal

**(i) Requirement and specification of Hydraulics Lab Equipment:**

<b>Sl. No.</b>	<b>Items</b>	<b>Qty Reqd.</b>	<b>Make &amp; model</b>	<b>Agreed by firm (Yes / No)</b>
1.	Bernoulli's theorem apparatus (with technical manual)	01		
2.	Discharge over notches apparatus (with technical manual)	01		
3.	Orifice and mouthpiece apparatus (with technical manual)	01		
4.	Venturimeter Apparatus for flow measurement	01		

Place:

Date: 2017

Authorized signature of  
the firm along with seal

**Annexure-II (E)**

**(ii) Requirement and specification of AUTOCAD LAB Software:**

<b>Sl. No.</b>	<b>Items</b>	<b>Qty Reqd.</b>	<b>Make &amp; model</b>	<b>Agreed by firm (Yes / No)</b>
1.	Autocad Civil (3D) Software with License for 05 Computer systems	01		

Place:  
Date: 2017  
with seal

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the firm along

**Chapter–V: Financial bid:** To be utilized by the bidder to quote their prices item wise.

**Annexure – III (A)**

**(i) Requirement of Surveying Practical Lab:**

Sl. No.	Items	Qty Reqd.	Make & model	Unit cost	Total (Including taxes & all charges etc)
1.	Metric Chains and arrows	05			
2.	Measuring Tape	06			
3.	Measuring Tape	04			
4.	Cross staff	02			
5.	Cross staff	02			
6.	Cross staff	02			
7.	Ranging rod	25			
8.	Ranging rod	25			
9.	Surveyors Compass	03			

10.	Pegs	25			
11.	Optical Square	01			
12.	Levelling Staff	05			
13.	Vernier Transit Theodolite	03			
14.	Umbrella	20			
15.	Iron Hammer	10			
16.	Plumb Bob	16			
17.	Walky Talky	05			

**Declaration:** It is hereby declared that the firm have carefully read and understood the tender and agreed with all the clauses, terms and conditions of the tender, Darbhanga jurisdiction etc and agreed that the decision of the University shall be final in all respect.

Place:  
Date: 2017

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the firm along with seal

**Annexure – III (B)****(ii) Requirement of Advanced Surveying Practical Lab:**

<b>Sl. No.</b>	<b>Items</b>	<b>Qty Reqd.</b>	<b>Make &amp; model</b>	<b>Unit cost</b>	<b>Total</b> (Including taxes & all charges etc)
1.	Total Station	05			
2.	Total Station	06			
3.	Electronic Theodolite	04			
4.	Auto Level with Tripod Stand	02			
5.	Auto Level- Digital	02			
6.	GPS Device	02			
7.	GPS Device	25			
8.	Tablet Note Taker	25			
9.	Note Taker 2 <sup>nd</sup> Generation	03			

10.	Tablet Mobile Note Taker	25			
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Place:

Date: 2017

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**Annexure – III (C)****(i) SUPPLY AND INSTALLATION OF VARIOUS TOOLS/EQUIPMENTS OF MATERIAL TESTING LAB**

<b>Sl. No.</b>	<b>Items</b>	<b>Qty Reqd.</b>	<b>Make &amp; model</b>	<b>Unit cost</b>	<b>Total</b> (Including taxes & all charges etc)
1.	Slump Test Apparatus with Tamping rod	05			
2.	Plastic bucket	05			
3.	Gauging Trowel	02			
4.	Gauging Trowel	02			
5.	Standard Test Sieves (8" dia)	05			
6.	Nylon or Pure Bristle Brush	05			
7.	Sample Trays	05			
8.	Sample Trays	05			
9.	Graduated Measuring Cylinder	05			
10.	Pycnometer	05			
11.	Non Absorbing Mixing Pan	01			
12.	Vernier Calipers	05			
13.	Dot Punch	05			
14.	Hammer	05			
15.	Measuring Scale	05			
16.	Stop Watch	05			
17.	Scale	10			
18.	Electric Oven	01			
19.	Vibrating Machine	01			
20.	Sieve Shaker	01			
21.	Aggregate Impact Test Apparatus	01			

22.	Electronic Weighing Balance	01			
23.	Compaction Factor Apparatus	01			
24.	Standard Test Sieves (12" dia)	01			
25.	Sand Pouring Cylinder Apparatus	02			
26.	Digital Weighing Balance	01			
27.	Adaptor	01			
28.	Adaptor	01			
29.	Stop Watch	05			
30.	Soaking Tank	05			
31.	Sample Tray	05			
32.	Thickness Gauge	05			
33.	Length Gauge	05			
34.	Cube Mould (70.6mm)	06			
35.	Cube Mould (100 mm)	06			
36.	Cube Mould (150 mm)	06			
37.	Cylindrical Mould	06			
38.	Computerized Universal Testing Machine	01			
39.	Izod Impact testing Machine (Pendulum Impact Tester)				
40.	Rockwell cum Brinell Hardness Testing Machine	01			
41.	Beam Deflection Test Set up	01			

**Declaration:** It is hereby declared that the firm have carefully read and understood the tender and agreed with all the clauses, terms and conditions of the tender, Darbhanga jurisdiction etc and agreed that the decision of the University shall be final in all respect.

Place:  
Date: 2017

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the firm along with seal

## Annexure – III (D)

## (i) Requirement and specification of Hydraulics Lab Equipment

Sl. No.	Items	Qty Reqd.	Make & model	Unit cost	Total (Including taxes & all charges etc)
1.	Bernoulli's theorem apparatus (with technical manual)	1			
2.	Discharge over notches apparatus (with technical manual)	1			
3.	Orifice and mouthpiece apparatus (with technical manual)	1			
4.	Venturimeter Apparatus for flow measurement	1			

**Declaration:** It is hereby declared that the firm have carefully read and understood the tender and agreed with all the clauses, terms and conditions of the tender, Darbhanga jurisdiction etc and agreed that the decision of the University shall be final in all respect.

Place:  
Date: 2017

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the firm along with seal

## (i) Requirement and specification of Auto CAD Lab Software:

Sl. No.	Items	Qty Reqd.	Make & model	Unit cost	Total (Including taxes & all carges etc)
1.	Autocad Civil (3D) Software with License for 05 systems	1			

**Declaration:** It is hereby declared that the firm have carefully read and understood the tender and agreed with all the clauses, terms and conditions of the tender, Darbhanga jurisdiction etc and agreed that the decision of the University shall be final in all respect.

Place:

Date: 2017

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the firm along with seal