**SHORT TIME TENDER**

**BIT/PUR/STT/MECH/20-21//IC000323/2020 DATE:07/01/2021**

To,

 **M/s. ..............................................**

Dear Sir,

Subject : Request for Quotation for Procurement TRIBOLOGY TRAINER BASIC MODULE ETC.

You are requested to submit most competitive rates(s) for the following item(s) as per details given below (Sealed Quotations may be sent by hand or by post):

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| --- | --- |
| Last date and time for submissions of complete Quotations by Email to dr.purchase@bitmesra.ac.in, purchase.sanjay@bitmesra.ac.in sealed quotations can be submitted to the under mentioned address. | **27.01.2021 15:00 Hrs.**( If all LTE Vendors submit the quotation prior to the submission date, the quotations will be opened prior to last date of submission.) |

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| Sr.No. | Item Description | **Quantity** |
| 1 | TRIBOLOGY TRAINER BASIC MODULEDrive unit for tribological investigationsModular experimental system for sliding and rolling frictionFeatures- base module for studying various cases of sliding and rolling friction - contact force by means of weights and lever - electronic measurement of the frictional force between friction partnersLearning objectives/experiments-- rolling friction of two disks with slip -- elasto-hydrodynamic behaviour (EHD theory) in rolling friction of a sphere against a flat surface -- wear test: pin against disk -- wear test: friction wheel experiment -- frictional vibrations and slip-stick phenomenon -- pressure distribution in the journal bearingSpecification[1] base module with drive unit and display and control unit for studying tribological phenomena [2] horizontal or vertical position of the drive shaft by means of pivotable motor block [3] various experimental units available as accessories [4] drive unit and experimental units secured by quick-action chucks [5] drive unit comprising DC motor with worm gear [6] speed of the DC motor is continuously adjustable[7] speed measured by incremental encoder [8] frictional force measured by force sensor [9] force and speed displayed on display and control unitDC motor - rated speed: 3000min-1 - torque: 18,5NmWorm gear: ratio 15:1 - operating speed: 0...200min-1, electronically controlledMeasuring ranges- force: 0...50N- speed: 0...200min-1230V, 50Hz, 1 phase230V, 60Hz, 1 phase; 120V, 60Hz, 1 phaseUL/CSA optionalLxWxH: 500x450x280mm (base module)LxWxH: 360x330x170mm (display and control unit | **01 Nos.** |
| 2 | FRICTIONAL VIBRATION.Frictional vibrationsDifferences between static and sliding friction, instabilityFeaturesslip stick phenomenon at the transition from static to dynamic frictionfriction rings of different materials for the study of different friction pairingsLearning objectives/experimentstogether with the drive unitobservation of the transition from static to dynamic frictioninfluence of lubrication on slip stick phenomenoninfluence of the force between the frict ion partners on the slip stick phenomenoninfluence of the relative velocity of the friction partners on the slip stick phenomenonSpecification[1] friction oscillations at static and dynamic friction[2] quick and easy assembly of theexperimental unit on the frame of the drive unit[3] rotating stainless steel disk[4] disk is driven by a clampable coupling between drive unit and gear unit[5] friction ring of different materials: stainless steel, brass or plastic (PA)[6] frictionpair subject to load by stepped weights[7] frictional force measured by force sensor[8] displays of force and speed and speed adjustment on the drive unitDisk - Ø: 60mm - stainless steelFriction ring - outer diameter: 80mmin ner diameter: 50mm1x stainless steel1x brass1x plastic (PA)Force sensor for frictional force0...50NWeights-1x 5N-3x 10NWeight: approx. 7Kg | **01 Nos.** |
| 3 | PRESSURE DISTRIBUTION IN JOURNAL BEARINGPressure distribution in journal bearingsDemonstration of pressure distribution in a plain bearing with hydrodynamic lubricationFeaturesdepiction of radial pressure distribution in a journal bearing at different bearing gap widthsbearing housing made of transparent plasticLearning objectives/experimentstogether with the drive unitpressure distribution in the journal bearing depending on speedpressure distribution in the journal bearing depending on load or bea ring gap widthstability limit as a function of the gap widthSpecification[1] demonstration and visualisation of the pressure distribution in a journal bearing withhydrodynamic lubrication[2] quick and easy assembly of the experimental unit on theframe of the drive unit[3] roller is driven by a clampable coupling between drive unit and gear unit[4] bearing housing is completely transparent[5] moveable bearing housing, adjustable bearing gap[6] 13 radial pressure measuring points on thebearing shell[7] radial pressure distribution indicated with 13 tube manometers[8] TM 260 base module required for operationTechnical dataShaft - diameter: 50mm, length: 50mm, material: stainless steelBearing shell - diameter: 52,5mmbearing gap adjustable from: 0...2,5mmAdjustment mechanism for bearing shellgraduation: 0,01mmOilISO viscosity grade: VG 32Measuring ranges - pressure: 360mm oil columnspeed: 0...200min 1LxWxH: 350x150x450mmWeight: approx. 4Kg | **01 Nos.** |

Sealed Quotation may be submitted superscribed with reference number as appended hereunder:-

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| Quotation for Supply of ---- Ref.No. -------- **BIT/PUR/STT/MECH/20-21//IC000323/2020** To,Dy. Registrar (Purchase) Birla Institute of Technology From : M/s----------------------------------------Mesra , Ranchi , Jharkhand Address : ----------------------------------------835215 Contact No. ------------------------------------- Email ID---------------------------------------  |

GST Exemption: The Institute is partially exempted from the payment
of GST vide GOI Notification No.45/2017-Central Tax (Rate), dated
14.11.2017 and 47/2017-Integrated Tax (Rate), dated: 14.11.2017 the applicable IGST will be at the rate of 5%. Necessary documents (DSIR) and related certification will be provided.

1. HSN code of the material should be mentioned in quotation.
2. All entries in the quotation should be typed or computer printed without any ambiguity and should be free from correction etc. Hand written offers will be rejected.
3. Late and delayed tenders will not be considered. In case any unscheduled holiday occurs on prescribed closing date the next working day shall be the prescribed date of closing.
4. The quotation should be submitted with descriptive literature & drawing. The make of the items offered should be clearly specified.
5. Material should be confirming to our specification. The deviations if any should be clearly indicated in the quotations.
6. Successful bidder has to furnish the OEM test certificates along with the materials (if applicable).
7. Rate /Price: The offered price shall be on **FOR BIT Mesra on Door Delivery basis**.
8. If offered Price Term is other than the FOR-Destination term, approximate Freight & forwarding charges along with the applicable Insurance charges may be mentioned.
9. Details of GST registration, PAN No. should be furnished along with quotations.
10. Road Permit: The supplier shall arrange Road Permit on his own for transportation material to BIT Mesra and any additional tax liability on this account shall be borne and paid by the supplier.
11. Purchaser will not pay separately for transit insurance/taxes (if any) and the supplier will be responsible until the stores arrive in good condition at the destination.
12. Warranty: Period of warranty should be clearly mentioned and also the parts covered under it. Warranty will be applicable from the date of successful installation.
13. Service Facility: Supplier must mention about the service set up in India & confirm effective after sales service.
14. BIT Mesra is not bound to accept the lowest or any quotation for whatsoever reason and reserve its right to accept or reject in whole or in part any or all the quotations received without assigning any reason.
15. Applicable taxes shall be quoted separately for all items and levies payable by the supplier under the contract shall be included in the unit price.
16. Each bidder shall submit only one quotation and sealed quotation to be submitted / delivered at the address. (Alternatively it can be email at purchase.sanjay@bitmesra.ac.in or dr.purchase@bitmesra.ac.in) or deliver by hand.
17. Training clause ( if any )to be mentioned.
18. Delivery period should be mentioned clearly in the quotation.
19. Conditional tenders will not be considered.
20. Authorized dealership certificate should be submitted in case principal manufacturing company is not quoting directly.
21. Customs Duty: The Institute is exempted from payment of Customs Duty Vide GOI Notification No. 51/96 Customs, dated 23.07.1996 & No.24/2007-Customs dated 01.03.2007 with registration no 11/161/90-TU-V dated 24.07.2019. Sd/-

Dy. Registrar Purchase

BIT Mesra Ranchi-835215