GOVERNMENT COLLEGE OF ENGINEERING, KEONJHAR

ସରକାରୀ ଯାନ୍ତ୍ରୀକ ମହାବିଦ୍ୟାଳୟ, କେନ୍ଦୁଝର

(An Affiliated College of BPUT, Odisha)

At: Jamunalia, P.O.: Old Town, Dist., Keonjhar, Pin: 758002 (Odisha)

Web: www.gcekjr.ac.in / Mail id- principal@gcekjr.ac.in

GOVT. COLLEGE OF ENGINEERING JAMUNALIA OLDTOWN KEONJHAR

No. 1022 **Date:** 06-06-26

TENDER CALL NOTICE

Sealed tenders are invited from reputed original equipment manufacturers/ authorized distributors up to the date mentioned in the tender for supply of equipments for Fluid Mechanics and Hydraulic Machines Laboratory through speed post latest by 10-07-2026, 4 PM for **Department of Civil Engineering, Government College of Engineering, Keonjhar**. The date of opening the tender is mentioned in the tender document, which will be opened in the office of the Principal, Government College of Engineering, Keonjhar in the presence of bidders and/or their nominees. The tender bid documents with details of terms and conditions are to be downloaded from the College Website: **www.gcekjr.ac.in**

The authority reserves the right to reject/cancel the tenders in whole or in part without assigning any reason thereof. The authority will not be responsible for any postal delay.

06/VI/2026

Principal

GCE Keonjhar

Principal
Govt. College of Engineering
Keonjhar

Bid Ref No. 1022 **Date:** 06-06-2026

BIDDING DOCUMENTS AND INSTRUCTION TO SUPPLY EQUIPMENTS FOR THE FLUID MECHANICS AND HYDRAULIC MACHINES LABORATORY FOR DEPARTMENT OF CIVIL ENGINEERING

GOVERNMENT COLLEGE OF ENGINEERING, KEONJHAR

Jamunalia, Old Town, Keonjhar– 758002

Principal
Govt. College of Engineering
Keonjhar

INVITATION FOR BIDS

Principal, Government College of Engineering, Keonjhar invites sealed bids from eligible bidders for supply of equipments for Fluid Mechanics and Hydraulic Machines Laboratory for the Department of Civil Engineering.

Interested eligible Bidders may obtain detail information and list of items with technical specifications from the website of the college **www.gcekjr.ac.in**

Particulars about submission of bidding document are as follows:

Price of bidding document	Rs. 2000/- (Service Tax is included) (non-refundable)
First date of availability of Bidding Document in the website	06-06-2026
Last date and time for submission of bids	10-07-2026, 4 PM
Time and date of opening of bids	Will be informed later
Place of opening of bids	Office of the Principal, Government College of Engineering, Jamunalia, Old Town, Keonjhar-758002
Address for communication	Principal, Government College of Engineering, Jamunalia, Old Town, Keonjhar-758002
Contact info for Civil Engineering Department	Sri Sitansu Kumar Das (HoD, Civil Engineering) Email: hod_civil@gcekjr.ac.in

06/VI/2026

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Keonjhar

1. Eligibility of Tenderer and General Instructions:

1.1 Eligibility:

Those who fulfill the following criteria are eligible to participate in the tender.

a) The tenderer must be a reputed Original Equipment Manufacturer (OEM) and/or the Authorized agent/ dealer of a reputed manufacturer. Manufacturers must provide all documents relating to their manufacturing capabilities and OEM certificate.

b) If the tenderer is an Authorized Dealer/Agent of a reputed manufacturer to supply goods in India, Authorization certificate from the OEM must be enclosed.

c) The tenderer must be registered with GST and PAN.

d) Annual turn-over of the tenderer must be more than Rs. 3 crores in last three financial years. As a letter of support, the bidder should submit audited balance sheet of last three financial years.

e) The tenderer must have up to date Income Tax Clearance Certificate or non-assessment certificate, as the case may be, from the competent authority and also up to date GST Clearance Certificate or non-assessment certificate, as the case may be, from the competent authority.

f) The tenderer must have the willingness for providing comprehensive maintenance support of the Machine supplied by him, for at least two years after expiry of the warranty period.

g) The tenderer must provide evidence of at least 3 (Three) Purchase Order (PO)/Work Order (WO) and successful execution of supply of orders within India to Institutes / Labs of National Repute like NITs/IITs/IIESTs/IISERs/NISER/IISc/Central Research Laboratories/ Government Engineering Colleges of Odisha, which should not be older than ten years.

h) All after sales support must be provided directly by the bidder.

i) Installation / Commissioning should be accomplished with priority, as soon as we receive the Consignment at site. Warranty and After-Sales Service should be provided within Maximum 48 to 72 hours of our call.

j) Declaration from the principal company / by the bidder-self stating that the spare parts of the equipment will be made available to GCE Keonjhar for at least 10 years from the date of installation.

k) The manufacturer should be preferably ISO: 9001-2008 certified.

l) The manufacturer should be preferably registered with ESI.

1.2 General Instructions:

The selection for procurement of equipment will be based on quality and performance along with cost. In this context decision of technical committee is final based on documentary evidence or actual physical verification.

a) Submission of more than one bid by a particular tenderer under different names is strictly prohibited. In case it is discovered later on that, this condition is violated, all the tenders submitted by such tenderer/s would be rejected or contract cancelled.

b) The tenderer should mention in the tender paper, the location of its service center nearest to Keonjhar.

c) All offers should be in English and the price quoted for each item should be firm.

d) Warranty period, Delivery period and After-Sale-Service conditions, etc. are also to be clearly indicated.

e) The rates and the conditions of the offer will remain valid for three months from the date of opening of the tender and no change or alteration of the rate will be acceptable on any account.

f) Submitted tender forms with overwriting or erased or illegible specifications and rates will be rejected.

g) Request from tenderer in respect of additions, alterations, modifications, corrections, etc. of either terms & conditions or rate after opening of the bid may not be considered. However, negotiation may be made before finalization.

h) Tenderers shall carefully examine the bid documents and fully inform themselves of all the conditions, which may in any way affect the work of the cost thereof.

i) Should a tenderer find discrepancies or omissions from the specification or other documents and any doubt as to their meaning, he should at once notify the purchaser and obtain clarification in writing.

j) This, however, does not entitle the tenderer to ask for time beyond the due date fixed for receipt of tenders.

k) The tenderer must also specify minimum time and maximum time to repair/replace in the event of a failure and penalty thereof.

l) Verbal clarification and/or information given by the purchaser or its employees or representatives shall not be binding on the purchaser.

m) Submission of sealed bid will carry with the implication that the tenderer agrees to abide

by the conditions laid down in the detailed particulars of the bid notice.

n) Conditional offers and offers qualified by vague and indefinite expression, as 'subject to immediate acceptance' 'subject to prior sale', etc. will not be considered.

o) While tenders are under consideration, tenderers and their representatives or other interested parties are advised to refrain from contacting by any means, to the purchaser's personnel or representatives on matter relating to the tenders under study.

p) The purchaser, if necessary, will obtain clarification on tenders by requesting such information from any or all the tenderers either in writing or through personal contact as may be necessary.

q) The tenderer will not be permitted to change the substance of his offer after the tenders have been opened.

r) In the event of non-compliance with this provision, the tenderer is liable to be disqualified.

1.3 Procedure for Submission of Tenders:

The Tenderers must submit their bids as required in two parts in separate sealed covers prominently super scribed as Part-I "Technical Bid" and Part-II "Financial Bid" and also indicating on each of the covers the "Tender call Notice Number & Date" and due date and time of submission as mentioned in Tender Call Notice.

Part-I (Technical Bid)

Except the price schedule, all other documents as mentioned in para 1.1 shall be covered in Part-I (Technical Bid).

a. Tender fee and EMD
b. OEM Certificate or Authorization certificate from OEM (if bidder is not OEM)
c. Copies of at least 3 (Three) PO/WO with IR
d. Copy of Firm Registration Certificate from the competent authorities
e. Proof showing annual turnover of 3 Crore for the last three financial years
f. Income Tax clearance certificate
g. GST registration Certificate
h. PAN Card copy
i. Details of technical specifications and Printed information Catalogue for each instrument
j. ISO Certificate
k. Willingness to provide comprehensive maintenance support for at least 2 (Two) years
l. Declaration for after sale spare parts support for 10 (Ten) years

m. Tender document duly signed by the authorized person on each page

Part-II (Financial Bid)

All indications of price shall be given in Part-II (Financial Bid).

a) Both sealed covers Part-I **"Technical Bid"** and Part-II "Financial Bid" should be placed in a third cover along with requisite **EMD & cost of Tender documents** (separately in the form of DD drawn in favour of **Principal, Government College of Engineering, Keonjhar** at any Nationalized Bank payable at Keonjhar), others requisite supporting documents etc. and sealed. The sealed cover containing tender documents as per procedure indicated above should be sent to the Office of the Principal, GCE, Keonjhar by Registered Post/Speed Post addressing to the Principal, Government College of Engineering, Jamunalia, Old Town, Keonjhar-758002 **within the due date and time as stipulated in Tender. The sealed envelope must show the name of the tenderer and his address and should be super scribed as "*Tender for supply of equipments for Fluid Mechanics and Hydraulic Machines Laboratory for Civil Engineering Department.*"**

b) All the documents submitted must be in the papers showing signature of the tenderer and printed office name of the tenderer on official seal.

All the documents must be submitted in a sequential manner with separator/flags to help in quick scanning of the topics. Wherever possible, data in tabular form should be given.

2. Requirements by Tenderer before Supply:

2.1 Rating Plate, Name Plate and Labels:

Each of the equipment is to have permanently attached to it, a rating plate of non-corrosive material in a conspicuous position, upon which the total specifications along with the manufacturer's name, address, etc. are to be engraved.

2.2 Packaging:

All the equipments are to be suitably protected, covered in water -proof packing and crated to prevent damage or deterioration during transit and storage till the time of installation. The supplier shall be responsible for any loss or damage caused during transportation, handling or storage till their successful installation.

2.3 Inspection:

a) All materials / equipment shall be inspected and tested for completeness, proper assembly,

operation, cleanliness and state of physical condition and performance as per quoted specification.

b) The test shall be conducted, reported and certifications to be provided by the tenderer.

c) The tenderer shall provide all test and measuring equipment/tools required for inspection / testing.

d) The cost of all such tests shall be borne by the Tenderer.

e) GCE, Keonjhar reserves the right to reject any equipment if it does not comply with the specifications during site testing, installation and commissioning stage.

f) Inspection & testing would be conducted, jointly, at various stages as applicable during unpacking, installation and commissioning of respective equipment / components at the manufacturing site.

2.4 Environmental Condition:

All the equipment supplied shall be rugged and should operate without any deviation in quality, or degradation of equipment performance. All the specification/parameters shall be guaranteed over the following environmental conditions:

- Storage Temperature : 0 to 50^0 C
- Operating Temperature : 0 to 50^0 C
- Humidity : 95% RH (non-condensing)

All the equipments are intended to operate under 220 V/ 440V, 50 Hz power supply.

3. Requirements by Tenderer after Supply:

3.1 Supply:

a) The material would be delivered by the supplier at **Department of Civil Engineering, GCE, Keonjhar, Jamunalia, Old Town, Keonjhar – 758002, Odisha, India.**

b) The items should be supplied directly from the manufacturing terminal having passed all tests successfully with Certifications as required.

c) The equipment should confirm to the latest relevant National/International standards and shall be completed in all respect.

d) Any component, fitting etc. which may not have been specifically mentioned in the specifications but which are usual and necessary for the equipment, shall be supplied by the tenderer at no extra cost.

e) In case, articles are found damaged in transit or found short at the time of delivery the full cost of the same will be deducted from the bill of the supplier in case the supplier does

not replace the stock within a week from the date of the complaint.

f) The articles ordered must be supplied in one lot within 4 (four) weeks of placing of the order.

g) In case of delay in delivery or successful installation, a penalty of 1% (one per cent) per week shall be levied.

h) GCE, Keonjhar reserves the right to procure the materials from alternative sources at the risk and cost of the successful tenderer giving 15 days' notice.

i) Any increase in tax and duties after expiry of delivery period will be borne by the supplier.

j) In case the items supplied by the supplier are found not up to the specification shall be rejected.

k) The supplier will be intimated to take back the stocks at his own cost within three days from the date of rejection and to replace the same within 7 days, failing which the EMD will be invoked in addition to taking legal actions.

l) Imported consignment, if any, should be destined to **Department of Civil Engineering, GCE, Keonjhar, Jamunalia, Old Town, Keonjhar – 758002, Odisha, India** through **Bhubaneswar Air Port**.

m) The suppliers shall be responsible for releasing the consignments from the carriers/transporters.

n) The equipment shall be delivered and installed at site at the cost of the tenderer.

o) All taxes, levies, surcharges including the customs clearance and handling freight and insurance should be paid and handled by the tenderer.

3.2 Installation and Commissioning:

Installation and Commissioning shall include the following:

a) Installation and Testing of the Equipment, Machineries etc. must be conducted by the tenderer at GCE, Keonjhar.

b) It will be the responsibility of the tenderer to provide all necessary spares and consumables, which may be required during installation and commissioning, at no extra cost to purchaser.

c) The tenderer is to bring their own testing and measuring instruments required for installation, testing, commissioning, which can be taken back after completion.

d) Installation must complete within 15 days after delivery on site.

e) During installation and commissioning the complete intended experiments is to be

conducted with results must be within accepted level of accuracy.

f) The raw materials and samples required for conducting experiments during installation is to be supplied by the tenderer free of cost.

g) The required foundations for the equipments to be installed shall be prepared by the tenderer at no extra cost to purchaser.

h) The equipments must be calibrated (if required), before commissioning. Furthermore, final calibration certificates for the respective equipments in printed format must be handed over to the purchaser.

i) The whole process of installation and commissioning must be completed within 45 days from the date of issuance of work order.

3.3 Documentation:

a) Detailed technical manuals, handbooks, drawings, calibration certificates, warranty card and factory quality assurance checklist, test results and any other certifications mentioned in the technical specifications shall be supplied along with the consignment.

b) Supplied manuals/handbooks must cover detailed technical specifications and installation, operation, maintenance and system safety procedures.

c) For experimental setups details of theory, procedure and methods of taking measurements etc. should be provided in the form of hand books for each experiment.

d) The receipts for GST paid, if any, for the supplied materials should also be submitted.

3.4 Trial Operation and Performance Guarantee Test:

a) After successful completion of Installation and Commissioning of the equipment, a 7-day continuous trial operation putting those on optimum use shall be conducted by the tenderer at site, during which the performance of the equipment shall be demonstrated for trouble-free continuous operation, meeting the specified standards and proper training shall be imparted to two persons of the purchaser.

b) During trial operation, tenderer shall do all necessary adjustments required to ensure the performance as per the acceptable level.

c) In case, guaranteed performance is not established, the tenderer shall be given opportunity to rectify/replace the equipment/components, and restart the 7 days continuous trial operation, at the risk and cost of the tenderer.

3.5 On-Site Warranty:

a) The equipments along with their parts may be used continuously. The reliability and safety of the total installed system and trouble-free operation are, therefore, of prime importance. The supplied devices/equipment and components shall be covered under **Two-years or more** comprehensive on-site warranty from the date of issue of successful completion of Performance Guarantee Report.

b) During the period of warranty, it shall be the responsibility of the tenderer to provide all essential spares and consumables, which may be required for maintenance and trouble-free operation of the devices / components at the tenderer's cost.

c) Software, if any, must be tested with at least one-year warranty for trouble free operation.

3.6 Comprehensive Maintenance Contract:

a) The tenderer shall be under the obligation of entering into a Comprehensive Maintenance Contract (CMC) with GCE, Keonjhar for a minimum period of two years, renewable if felt necessary, on mutually acceptable rates, terms and conditions. CMC shall start after the completion of Warranty.

b) The scope of CMC shall cover maintenance and supply/replacement of materials and components, for smooth and reliable operation of the systems without trouble.

c) Accordingly, the tenderer has to offer rates for the CMC structure per equipment along with the price for the Systems and other associated Equipment supplied.

3.7 After Sales Service:

a) During the warranty period and subsequently, after signing of Agreement for CMC the tenderer shall attend to the problems reported by the users of GCE, Keonjhar on a priority basis.

b) The Spare parts of the equipment must be made available to GCE Keonjhar for at least 10 years from the date of installation.

c) For any problem reported the tenderer shall attend and rectify the problem within 7 (seven) days or provide a standby system of the similar configuration.

d) The report on any problem will be informed through phone or fax number of which shall be given by the tenderer.

e) The branch office of the concerned manufacturing firm will be fully responsible to provide maintenance service, in case of any negligence, in providing the service by the tenderer.

f) On failure to comply with those instructions, the Bank Guarantee provided for the

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warranty period shall be invoked.

4. Financial Terms:

4.1 EMD

a) The tenderer has to submit a Demand Draft / Banker's Cheque / Pay order of Rs. **50,000/ -** in favour of **Principal, Government College of Engineering, Keonjhar** payable at Keonjhar in any Nationalized Bank towards EMD.

b) There will be no interest paid to the tenderer towards EMD money.

c) In no case, the EMD Money in cash or other forms will be accepted at the time of opening of the bid.

d) No request for adjustment of claims, if any, will be accepted.

e) The EMD of unsuccessful tenderers will be refunded as soon as possible after the tenders are finalized.

4.2 Performance Security Deposit

In case of successful Bidder EMD will be kept as Performance Security Deposit and will be refunded after expiry of stipulated warranty periods from the completion date of installation and commissioning on satisfactory performance of the equipment.

4.3 Prices:

Price quoted should be for **Government College of Engineering, Keonjhar** only. **Tax components as applicable should be mentioned clearly in the financial bid.**

a) Price should be quoted for unit item.

b) Purchase order will be placed as a single lot for each type of item or for all the items together.

c) In case of items of import, the tenderer should take full responsibility for customs clearance, handling, tax payment, etc. and specify the charge for the same in the price bid.

4.4 Tax Concession:

Central Sales Tax Concession is to be availed on production of the required certificates applicable to Educational Institution.

4.5 Discount:

a) Our Institute is a pioneer Institution in the field of Teaching and Research in Engineering and allied disciplines and do not run with profit motive.

b) As such we are availing price discount for purchase of equipment/instruments.

c) The rate of discount or any other Institutional benefit arising out of Govt. Policy etc., on each item may also be indicated in the bid specifically.

4.6 Payments:

a) In case of imported items, payment will be made by opening Letter of Credit (LC) in the name of the manufacturer subject to the condition that a Bank Guaranty for an equal amount will be submitted by the selected tenderer to GCE, Keonjhar for the period of completion of installation and commissioning.

b) In case of purchase in Indian Rupees, payment of 90 percent of the ordered value will be made after successful installation and commissioning of the equipment subject to submission of satisfactory performance report by the concerned Head of Department. The rest 10 percent of the payment will be made after one year of successful installation of the equipment.

4.7 Penalty:

If the delivery, installation and commissioning is not carried out in time as specified in other part of the tender document, the tenderer/manufacturer will be charged @ 1 % (one per cent) per week of the total value of the concerned machine / equipment.

5. Instruction to the Tenderer:

a) Some of the minimum specifications specified may be redundant, obsolete or incompatible and in these cases, quote the particulars of correct specification of latest trend and technology.

b) Higher specifications instead of minimum specifications are allowed if a minimum specification is not available, obsolete or incompatible.

c) Otherwise, model with higher specification should be in addition to the model with minimum specifications.

d) Specify brand name and full model name and number for each offer.

e) Include the printed catalogue and pricelist if any for each of the equipment quoted.

f) Specify the list of Accessories required along with each of the equipment.

g) Quote the additional price of the accessories; only those, which are fully compatible with the quoted model, should be furnished.

h) Specify the list of Accessories to be given free of cost, along with the equipment as **"Free Accessories"**; these should be fully compatible with the quoted models.

5.1 Solving Disputes:

a) GCE, Keonjhar the tenderer and the manufacturer shall make all efforts to resolve amicably by direct informal negotiation on any disagreement or dispute arising between them under or in connection with this contract.

b) All disputes arising out of the contract shall be referred to courts under the jurisdiction of the Keonjhar court only.

c) **The above terms and conditions except those otherwise agreed upon, shall form a part of the Purchase Order.**

d) Sign on each page of this tender document and Return it along with the offer enclosing this part together with the Technical Offer.

e) The GCE, Keonjhar authority has all rights to accept / reject any tender without assigning any reasons thereof.

6. Technical Specifications:

Following are the minimum specifications of the equipment.

a) The minimum specifications are indicative and not exhaustive.

b) The models with higher specifications may be quoted.

c) The quoted materials should be of latest trend and technology.

d) Each equipment should be complete without needing any extra requirements except the requirement of general test and measuring instruments.

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Fluid Mechanics and Hydraulic Machines Laboratory Equipment List for Department of Civil Engineering, GCE, Keonjhar

Sl. No.	Name of the Equipment	Specification	Price (Rs.)
1	**Metacentric Height Apparatus**	A ponton is allowed to float in a small tank having a transparent side. • Removable steel strips placed in the model for the purpose of changing the weight of the model. • Displacement of weight is measured with the help of scale. By means of a pendulum (consisting of a weight suspended to a long pointer) the angle of tilt can be measured on a graduated arc. • For tilting the ship model, a across bar with movable hanger is fixed at the center on the model. • Pendulum and graduated arc are suitably fixed at the centre of the cross bar. • A set of weight is supplied with the Apparatus. **Utilities Required: -** • Water Supply: Initial Fill • Floor Area 1 m x 0.6 m • Drain required. **Technical Details:** • Pontoon: Size 350 x 200 x 150 mm (aprox.) with Horizontal Guide Bar for aiding weight, MOC Acrylic and Removable Strips, Graduated Arc with Pointer with moveable hanger and set of weights. • Water Tank: Stainless Steel of size 0.7X0.7X0.3 m a drain plugs for floating the modelship. • Front Window of Tank: Made of Glass/Perspex. Floating Vessel: Size 16x36 cm HXL / Diameter 20.5 cmlner/FRP or MS/SS. • Adjustable Weight: 200gms/100 gms/ 50 gms. • Max. angle of heel: ±13. • Corresponding linear dimension: ±90mm. • A set of weights is supplied with the Apparatus. • Instruction Manual: An English instruction manual will be provided along with the Apparatus Tanks will	

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		be made of Stainless Steel. • Pendulum and graduated are for accurate measurement of Tilt angle.	
2	**Bernoulli's Theorem Apparatus**	• Acrylic test section • Closed loop water circulation • Compact & standalone set up • Stainless steel tanks • Superb Painted structure • Simple to operate & maintain. **Technical Details:** • Test Section: - Material Acrylic, size 1"dia • Inlet Tank: - Capacity 15 Ltr MOC SS • Supply Tank: - Capacity 50 Ltrs MOC SS • Measuring Tank: - Capacity 30 Ltrs MOC SS fitted with Piezometer Tube & scale • Piezometer Tubes: - Material P U Tubes (9Nos.). • Pump: -FHP capacity make Crompton Greaves/Kirloskar. • Piping: - MOC GI and PVC • Stop Watch: Electronic • Overall Dimensions: - (L x B x H) 120 x 42 x 170 cm	
3	**Flow Over Notch Apparatus**	To determine co-efficient of discharge using different notches. • Closed loop water circulation • Compact & standalone set up • Stainless Steel tanks and wetted parts • Superb Painted structure • Simple to operate & maintain **Technical Details:** • Tech Notches :- Set of 3 Notches (SS Plates) : Rectangular Notch, 45* V Notch & 60* V Notch • Channel Section :- Size 600 x 250 x 180 mm MOC SS • Supply Tank :- Capacity 80 Ltrs. MOC SS • Measuring tank: Capacity 30 ltrs MOC SS fitted with Piezometer Tube & scale. • Vernier gauge: - To measure head of water in channel. • Pump: -FHP capacity make Crompton Greaves / Kirloskar • Piping: - MOC GI and PVC • Stop Watch: - Electronic • Overall Dimensions: - (L x B x H) 120x 42x 160 cm.	

4	**Orificemeter Apparatus**	To determine the co-efficient if discharged through Orificemeter. To measure discharge through Orificemeter as flow meters. • Acrylic test section • Closed loop water circulation • Compact & stand-alone set up • Stainless Steel tanks • Superb Painted structure • Simple to Operate & maintain **Technical Details:** • Orifice meter: - Material Clear Acrylic /Brass / SS Plate compatible to 1" Dia. Pipe • Water Circulation: -FHP capacity make Crompton Greaves / Kirloskar. • Flow Measurement: Capacity 30 Ltrs. MOC SS fitted with Piezometer Tube & scale • Sump Tank: - Capacity 50 Ltrs. MOC SS • Piping: - MOC GI and PVC. • Stop Watch: - Electronic • Control Panel: - On/Off Switch, Mains indicator, etc. • Overall Dimensions :-(L x B x H) 120x 42x 120 cm	
5	**Venturimeter Apparatus**	To determine the co-efficient of discharged through Venturimeter. To measure discharged through Venturimeter as flow meters. • Acrylic test section • Closed loop water circulation • Compact & standalone set up • Stainless Steel tanks • Superb Painted structure • Simple to operate & maintain **Technical Details:** • Venturimeter :- Material Clear Acrylic Compatible to 1" Dia. Pipe. • Water Circulation: - FHP capacity make Crompton Greaves/Kirloskar • Flow measurement: - Capacity 30 ltrs MOC SS fitted with Piezometer Tubes & scale • Piping: - MOC GI and PVC • Stop Watch: - Electronic • Control Panel: - On/Off Switch, Mains Indicator, etc. •Overall Dimensions: - (L x B x H) 120 x 42x 120 cm.	
6	**Reynold's**	To determine the Reynolds's number and hence the	

	Apparatus	type of flow either laminar or turbulent. To study transition zone. • Visible Test Section • Closed loop water circulation • Compact & standalone set up • Stainless Steel tanks and wetted parts • Superb Painted structure. • Simple to operate & maintain **Technical Details:** • Tube: - Material Borosilicate glass. • Dye vessel :- Suitable Capacity • Capillary Tube:- Material Copper /Stainless steel • Constant Head Water Tank:- Capacity 25 Ltrs, MOC SS • Water Circulation :-FHP capacity make Crompton Greaves /Kirloskar • Piping:- MOC GI and PVC • Flow Measurement :- Using Measuring Cylinder • Sump Tank :- Capacity 50 Ltrs MOC SS • Stop watch :- Electronic • Control Panel :- On/Off Switch, Mains Indicator, etc. • Overall Dimensions :-(L x Bx H) 135x 42x 145 cm	
7	**Friction in Pipe Lines Apparatus**	To determine the losses due to fiction in pipes. • Choice of Test Section • Closed loop water circulation • Compact & standalone set up • Stainless Steel tanks and wetted parts • Superb Painted structure • Simple to operate & maintain **Technical Details:** Pipe Test Section:- A set of total 3 pipes (Length 1 m) is provided out of Material GI of size diameter 1/2", 3/4" & Material SS of Size Diameter 1/2". • Supply tank: - Capacity 50 Ltrs. MOC SS. • Measuring Tank: - Capacity 30 Ltrs. MOC SS fitted with Piezometer Tube & scale. • Pump: - FHP capacity make Crompton Greaves/ Kirloskar. • Piping: - MOC GI and PVC • Stop Watch: Electronic • Overall Dimensions :-(Lx Bx H) 170 x 42x 170 cm	
8	**Study of Pipe Fittings, Sudden Enlargement &**	To determine loss of head in the fitting at various water flow rates. To measure the loss coefficient for the pipe fittings.	

	Contraction Apparatus	• Hoice of Test Section • Closed loop water circulation • Compact & Standalone set up • Stainless Steel tanks and wetted parts • Superb Painted structure • Simple to operate & maintain **Technical Details:** • Test Section: - Sudden Enlargement from 15mm to 25mm Sudden Contraction from 25mm to 15mm. Fittings Size 1/2" Bend, Elbow, Meter Bend, Ball valve, Gate valve. Straight pipe section for Study of friction in pipe. • Water Circulation: - FHP capacity make Crompton Greaves/ Kirloskar. • Flow Measurement: - Capacity 30 Ltrs MOC SS fitted with Piezometer Tube & scale. • Piping: -MOC GI and PVC • Sump Tank: - Capacity 50 Ltrs MOC SS • Stop Watch: - Electronic • Control Panel: - On/Off Switch. Mains Indicator etc. • Overall Dimensions: - (L x B x H) 180 x 42x 170 cm	
9	**Impact of Jet On Vanes Apparatus**	To study the force developed by impact of jet on different surfaces. • Visible Test Section • Closed loop water circulation • Compact & standalone set up • Stainless Steel tanks and wetted parts • Superb Painted structure. • Simple to operate & maintain **Technical Details:** • Test Surface :- Set of 2 - Flat Plate & Hemispherical Cup • Nozzle:- Material Brass / SS • Enclosure:- Clear acrylic • Supply tank:- Capacity- 50 MOC SS • Measuring tank :- Capacity 30 Liters MOC SS fitted with Piezometer Tube & scale • Pump :- FHP capacity make Crompton Greaves/Kirloskar • Piping :- MOC GI and PVC • Stop Watch :- Electronic • Overall Dimensions :- (LxBxH) 105 x 42x 170 cm	
10	**Free and Forced Vortex Apparatus**	The experimental set up consists of two circular transparent cylindrical tanks fitted on plate. One Tank	

		is fitted with four circumferential jets have been placed along the circumference of the cylinder near its bottom. A replaceable orifice is kept at the bottom plate at drain & to get different conditions. Flow of water from sump tank & supply pump when allowed to enter the cylinder exiting out through the drain orifice at bottom helps in the formation of free vortex. (It is assumed that the torque exerted by these jets are negligible). The other circular transparent cylindrical tank can be rotated with the help of a variable speed motor so that the cylinder rotates about its vertical axis. Add water from top of tank to form the forced vortex. A pointer gauge is provided to measure the profile of vortex formation. Conditions were allowed to steady state and the depth of flow at any particular point was observed not to change over a period of time. The system is closed circuit type contains sump tank, rotameter, pump, motor, pipe line etc. The tanks are duly painted to protect from rust and corrosion. **Experiments:** To plot the surface profile of a free and forced vortex by measurement of the surface profile coordinates and to show that total energy is constant throughout vortex. **Features:** Clear Acrylic test section Superb Painted structure Simple to operate & maintain **Utility Required:** Water Supply & Drain Electricity: 1kW, 230V AC, single phase. Floor Area: 1.0 x 0.75 m **Technical Details:** Cylindrical Tanks 2 No.: - Material Transparent Acrylic, Dia. 200 mm (approx.) Pointer Gauge: - to measure X-Y coordinate of JET. Orifice: Set of 3 different Sizes, Material SS Flow circulation: Pump FHP capacity Flow Measurement: Rota meter Sump tank: MOC SS Capacity 50 Ltrs Drive Motor: FHP variable speed motor with drive with RPM Indicator Piping: MOC PVC Size ¼"	

		Flow circulation: Pump FHP capacity Flow Measurement: Rota meter Sump tank: MOC SS Capacity 50 Ltrs Drive Motor: FHP variable speed motor with drive with RPM Indicator Piping: MOC PVC Size ¼" Control panel: Standard make on/off switch, mains indicator & fuse etc. Overall Dimensions: (L x B x H) 1200 x 420 x1200 mm	

To

The Principal,
GCE Keonjhar

Sub: Submission of Tender for "Supply of equipments for Fluid Mechanics and Hydraulic Machines Laboratory of Civil Engineering Department at Government College of Engineering (GCE), Keonjhar Campus" AT: Jamunalia, PO: Old town, Keonjhar–758002, Odisha.

Sir,

After reviewing the contract conditions, specifications, and related details, I/We, the undersigned, hereby submit our offer to supply of equipments for Fluid Mechanics and Hydraulic Machines Laboratory of Department of Civil Engineering, GCE Keonjhar, in full compliance with the tender terms, conditions, and specifications.

i. I/We agree to strictly adhere to the terms and provisions outlined in the contract and unconditionally accept all tender conditions mentioned in the notice inviting tender.
ii. I/We further certify that no additional conditions have been stipulated in our tender offer. If any such condition is found after the opening of the tender, I/We accept that our bid will be summarily rejected and the Earnest Money Deposit (EMD) may be forfeited without prejudice to any other rights available to GCE Keonjhar.
iii. I/We hereby submit the earnest money of [INR……..……] for the Tender for the above-mentioned work in the form of demand draft.
iv. I/We solemnly declare that no bribes or unlawful payments have been made or shall be made to any official of GCE Keonjhar, either for obtaining this contract or during its supply and installation, including at the time of bill payments. Should any GCE Keonjhar official demand gratification, I/We shall immediately report the matter to the GCE Keonjhar authorities.

I/We understand that GCE Keonjhar reserves the right to reject the lowest or any bid without assigning any reason.

Thanking you

Yours faithfully

Date:

Signature of Bidder
Name: ……
Mob. No.:……
Witness……
Signature……
Address……

Suman Dash