GURU JAMBHESHWAR UNIVERSITY OF SCIENCE AND TECHNOLOGY HISAR

EXPRESSION OF INTEREST

This University published an expression of interest to conduct online examinations of the courses run in the affiliated Degree Colleges in February, 2022 onwards keeping in view the large number of students during the COVID Pandemic on 24.01.2022 on the University website but the requisite firms/agency did not qualify in their technical bids. Therefore, the University again invites expression of interest. The interested agencies/firms may apply afresh within 03 days i.e. upto 03.02.2022 (02:00PM) in two PDF format files for Technical and Financial bid through email on email ID coe@gjust.org in password protected or by post in two sealed separate envelopes in the office of the Controller of Examinations by quoting their rates for the following examination work of approximately 30000 studentsX04 Papers= 120000($\pm$ 15%) in sealed envelopes alongwith a Demand Draft of Rs. One Lakh as Earnest/Security Money in favour of the Registrar, Guru Jambheshwar University of Science and Technology Hisar and the guidelines of online examinations to be conducted by the agency/firm.

> "Online examinations with monitoring per student and printing of hard copy of Answer Sheet(40 pages of both sides per Answer Sheets)"

If bids are sent through email the password of Technical and Financial bid may be sent on mobile no. 9416929398 of Deputy Registrar(Exams) of this University separately:-

The specifications of EOI are attached.

REGISTRAR

Specifications for EOI Related to Online Examination Work

The Complete Examination process has been divided into three broad phases

- General
- Pre-Examination Phase
- Examination Phase
- Post-Examination Phase

The procedures which are required to be followed for the pre-examination, examination and post-examination operations include the capability of the bidder to set up a secure Master Control facility where the post-examination data will be uploaded.

1. **General**
   - No of candidates: 30000X4= 1,20,000 ($\pm$ 15%)approx. including reappear students.
   - Duration of Exam: 180 minutes for Subjective Type Question Paper or as decided by the GJUS&T, Hisar as per question paper.
   - Additional time for before and after the Examination: To be decided by the University.
   - The software should be capable of conducting at least 15000 candidate's concurrent examinations smoothly in a single session.
   - Annual turnover of the bidder must not be less than Rs. Five Crores and proof of audited balance sheet of last three financial is required.
   - The bidder should have satisfactory experience of conducting subjective examinations in minimum 2 state owned universities or central universities.
   - The bidder should have never been de-barred or black listed, an affidavit in this regard must be attached from first class magistrate.
   - The bidder must possess valid GST registration number (copy of same must be attached).
   - The bidder should have conducted Minimum 200000 Online subjective examinations in last 2 years
   - ISO certificates are required from the bidder
   - EMD of one lakh has to be submitted by each bidder at the time of apply. However if the bidder is registered under MSME then it's exempted and necessary proof has to be submitted along with technical and financial bid.
   - The bidder must submit their technical bid as well as financial bid in two PDF format files separately through email on email ID **coe@gjust.org** in password protected or by post in two separate sealed envelopes upto 03.02.2022 (2.00 p.m) in the office of the Controller of Examinations. **If bids are sent through email the**

password of Technical and Financial bid may be sent on mobile no. 9416929398 of Deputy Registrar(Exams) of this University separately.

- **Penalties**
  i.   0.5% of billing amount as fine shall be imposed, if any ambiguity/hindrance is found at any stage during the exams. The Officer to be appointed by the Vice-Chancellor being Arbitrator under this agency shall be final all way.
  ii. University reserves the right to take action such as cancel the contract, or impose the fine, if any discrepancies are found during examinations. The decision of University Authority in this regard shall be final.
- In case of any dispute it will be addressed subject to Hisar district jurisdiction only.

1.1. Other Requirements

- Question Paper Authoring
- Bulk upload features for the following:
  i.   Questions
  ii.   Question paper Templates
  iii. Candidates information
  iv.   Method to encrypt the bundle of question papers and transfer to the bidder
  v.   Software to conduct as well as monitor the status during the conduct of the examination of all the candidate
  vi.   Date Sheet, Programme wise/Paper Wise/Subject Wise/Session Wise/Paper ID Wise
  vii. Software for post examination operations that includes:
- Course-wise Bulk Download (pdf/image format) of all answer script
- Detailed response sheet for every candidate paper wise
- Audit logs of activities of every candidate
- Analytics and basic statistics on the responses obtained from all the candidates
- Help Desk support at all phases of examination for all stakeholders in coordination with the University alongwith a person with mobile and whatsapp number for dealing with the enquires of the students relating to exams queries.
- Bulk e-mail or SMS facility to notify students regarding any updates/information

1.2 Pre-Examination Phase

The bidder will work with GJUS&T, Hisar to facilitate the following and ensure that the examination is smoothly conducted for the examination takers.

- The selected bidder is expected to draw the examination plan and implement the design of the examination processes as required by GJUS&T, Hisar
- Broadly, the requirements will be as follows:

i. To synchronize the data of the student paper ID wise
ii. Bulk uploads support including images (for Student Details, Question Papers in MS Excel format)
iii. Question Paper (QP) review
iv. QP encryption (at rest and during network transfer)
v. Mapping of QP with the time-table/Schedule of the examinations
vi. Training-University Stakeholders for QP creation/Monitoring and operation the software etc. for smooth conduct of papers.
vii. Conduct Online Mock test for Students
viii. Help Desk support with one person alongwith customer care number with at all phases of examination for all stakeholders in coordination with the University.
ix. Software should have facility for login and have proper rights management for Examination Authorities/Invigilators etc.

- The bidder would provide the Question Paper Authoring software and train GJUS&T, Hisar officer/official on Question Paper Authoring
- The bidder would train the Proctors identified by GJUS&T, Hisar (if necessary)
- The proposal submitted by the bidder should indicate the manner of Examination delivery and the limits to which the system has been tested in terms of the number of client systems connected simultaneously, without loss of performance in the examination environment

Students must be provided the following:

- The examination software is working and launching without any hitch
- The microphone, web camera and the browser settings are working well in the laptop/desktop/smart phone/tablet and can be activated during the examination
- Access to the mock examination to be able to test their connectivity to the system and the software a few days ahead of the examination. The candidate should be able to test the system and get an idea of how the questions will be displayed during the actual examination.
- Clear and transparent guidelines agreeable by GJUS&T, Hisar and the bidder, to be given to the candidates on the activities that are considered as malpractices for an online proctored examination

- Bidder should communicate clear guidelines (on dos and don'ts) to the Candidates well in advance, so that the candidate is ready for the online proctored examination
- The software must obtain concurrence of the candidate for having read all the instructions before the start of examination
- Any other processes related to the conduct of the Examination, including preparation of pre-examination mock test and practice modules for candidates to be hosted on 24/7 operational servers and conduct of practice sessions for the online examination
- The successful bidder shall prepare and provide the Standard Operating Procedure (SOP) forecasting for all the processes for the safe and secure conduct of the examination along with the rules for contingency and exception handling/emergency procedures
- The bidder shall provide specifications for Hardware and Software required at all stages of the examination at the student side/user machine
- Devices and systems to be used for authentication and audit trail mechanisms required for Examination
- The successful bidder shall provide necessary consulting, training and manpower support to handle the entire Examination. If the required Hardware, Software and networking shall be installed by the Bidder on lease/rent basis, whose cost shall be covered under the commercial bid.
- The successful bidder shall carry out periodic audit for
  Hardware, Processor, RAM, Network, Webcam, Microphone, Key Board etc.
  Software-Operating System, Browser, Screen resolution and Network connectivity and report to the stakeholders
- The successful bidder shall provide a facility to all the candidates to register themselves online for a mock test prior to the commencement of the first examination mutually agreed with GJUS&T, Hisar. Additional mock examination shall be conducted by the successful bidder, if need. The same facility should also be available online to be run through the web server. The mock examination be on the same model as the actual examination
- The list of candidates who did not participate in the Mock Examination is to be provided to GJUS&T, Hisar by the successful bidder
- The successful bidder shall provide the facility for securely implement the Question Papers (in English and Hindi languages, if required) for the online examination. Absolute confidentiality shall be maintained at all stages of the examination

- The successful bidder shall provide required instructions/ Information to the candidates appearing for examination with verbal/video/written document for awareness of the students
- All pre-examination phase processes shall be carried out by the successful bidder in consultation with GJUS&T, Hisar
- At the time of execution of bid, the successful bidder must ensure for the provision of the maximum concurrent users and help desk support towards the conduct of examination

Malpractices and Guidelines to be conveyed to the Candidates

- Clear and transparent guidelines agreeable by the successful bidder and GJUS&T, Hisar shall be given to the candidates on the activities that are considered as malpractices for an online proctored examination
- These guidelines will be updated and approved by GJUS&T, Hisar on a regular basis
- The successful bidder should communicate clear guidelines (on dos and don'ts) to the candidate well in advance so that the candidate is ready for the proctored examination
- The successful bidder should communicate clear guidelines to the candidates on malpractices
- Disqualification criteria should be as per malpractice regulations as stipulated by GJUS&T, Hisar
- There should be clear guidelines given to the candidate as to when to hold, re-start and terminate the examination
- The system should be designed such that the examination should commence only after the confirmation by the candidate for having read the instructions

1.3 Examination Phase
- The successful bidder shall make the following necessary arrangements, in consolation with GJUS&T, Hisar
  - i. Candidate details
  - ii. Examination attendance – Shift wise/Programme Wise/ Subject/Wise/Day Wise/Paper ID Wise
  - iii. Training the stakeholders on the client side
  - iv. Incidents reports (if any)
  - v. Help Desk support
- The examination shall be computer based proctored online subjective examination as per the list provided by the GJUS&T, Hisar

- Sufficient time of 15-20 minutes shall be allotted before the examination for online instructions about the structure of the examination, time limits and guidelines for answering the questions
- The computer-based proctored online examination software should support standard features such as the display of details of candidates, detailed instructions upon login, start and closure of examination at scheduled time, time left and prompt for submission as per exam pattern.
- Details to be displayed on candidate's console as part of Examination software during the examination.
  i.   Display of instructions to candidates up on login and before the start of examination. The candidate must be able to retrieve instructions at any time during the examination as well.
  ii.   Start and closure of the examination at the scheduled time (candidates must not be able to start their examination even if they login before the scheduled time).
  iii. Display of remaining time available to the candidate
  iv.   Display of candidate's details on the screen (including a photograph if available) during the examination.
  v.   The preview of question paper in case of Subjective type question paper.
- **Scanning/Uploading of answer scripts in case of Subjective Examination**
  i.   The candidate should able to scan/upload answer scripts question wise at the end of the examination or in between the examination as per their convenience.
  ii.   The candidate shall be able to see the preview of their uploaded answer script so that they ensure that the answer sheets scanned/uploaded is clearly legible and answer sheets are in sequence.
  iii. QR Code time should be increase as per time of 30 minutes after ending of exam or to be specified by University.The candidate can scan/upload multiple answer sheets at one time.
  iv.   Candidate can also scan/upload the answer sheets through PDF.
  v.   Time of scanning/uploading of answer sheet must be shown on the hard copy of answer sheet i.e. within the time limit of 30 minutes after ending of exam.
- **Online Proctoring**
  i.   This activity involves the activation of online Proctoring facility for the candidates. This should be on a Real Time basis but without compromising the credibility and security of the examination.

ii. Human proctors will be provided by bidder or by the University as and when required.

iii. This feature is to be backed up by Artificial Intelligence (AI), and the same should be customizable as per GJUS&T, Hisar requirements.

iv. The online Proctoring activity must have the following features:

- Establish candidate authentication;
- Check candidate's computer Hardware, Web Camera, microphone, software, surroundings, network, bandwidth etc. As per the online Proctored Examination requirements.
- The online Proctoring facility should allow for human proctoring through Live Feed of the examination of each candidate, if needed.
- Examination resumes to be allowed only within a small-time limit, customizable by GJUS&T, Hisar.
- Search for any candidate attempting the examination.
- Familiarization of candidate to online Proctoring, Do' & Don'ts, Instructions, bio breaks etc.
- Provide quick access to GJUS&T, Hisar to view Paused/Disconnected candidates.
- Any other activities that are necessary and required as demanded.

Invigilation during the examination

i. The enrollment number, photo, name and DOB are to be verified by the online proctor of system prior to allowing the candidate into the examination. Every screen of the Candidate (examination taker) will have a photograph visible to the candidate. The replica of the screen shall be visible to the online proctoring system also.

ii. The online proctoring system with AI features shall monitor the examination taker continuously and provide support till the end of the examination.

iii. The online proctoring system should also ensure proper conduct of examination and ensure that candidates do not use un-fair means during the examination, as per the specifications agreed upon by Service Provider and GJUS&T, Hisar.

- Monitoring: the software shall have the capability to start the examination for all the candidates, monitor the status of each candidate (whether logged in, examination started, idle/active, disconnected, submitted, geolocation, IP address, etc.) the server must maintain an audit trail of every operation of the candidate machine on the server.
- Master Control Facility: The conduct of examination should be accessible for monitoring by GJUS&T, Hisar, ably supported by technical personnel who are well

versed with the online proctored Examination Software. At the end of examination in each session, the candidate's response data and audit trail data of each candidate to be shared with GJUS&T, Hisar. The bidder should provide the facility to monitor the pre-examination, during examination and post-examination activities of all candidates taking examinations simultaneously.

1.4 Following provisions shall be made available by GJUS&T, Hisar

i. Student data includes Name, Enrollment number, Photographs, Programme name, institute name, subject code for which the candidate applied for appearing, for uploading in data base.

ii. Question papers for the conduct of online examination before the examination as per the mutually consent with the GJUS&T, Hisar.

iii. Schedule of examinations.

iv. Rules and guidelines for online exam in consultation with the bidder.

1.5 Post-Examination Phase

- Bulk download of the answer scripts (readable format like pdf/image file which are printable on A4 size paper.

- In case of subjective examination, the evaluation shall be done by the evaluators deployed by the GJUS&T, Hisar.

- Bidder should setup the infrastructure of printers and manpowers in University campus for Hard copy printing of answer sheets.

- Bidder should provide the hardcopy of answer sheets to Examination department paper wise & student ID wise.

- Hardcopy printing of answer sheets will start parallel to exams and has to be completed within 03 (Three) days after completion of examinations in the University.

- University will provide the space to the bidder setup of infrastructure for the examination period.

- The candidate's responses, photograph, audit trails and Video Streaming should be uploaded automatically to the successful bidder's data center in a secured manner. There should not be any traces of any data pertaining to the candidates whatsoever left on the candidate device after the examination.

- The successful bidder should be able to hand over the raw responses/data to GJUS&T, Hisar immediately (same day) from the bidder's server after the candidate's response. The software should have the capability to take the answer key, post examination. The data also needs to be uploaded to a server at the Master Control Facility of the service provider.

- Note:
  i. The successful bidder shall carryout/demonstrate complete System Test Run (STR) with test data to GJUS&T, Hisar before implementation of the software. The selected bidder should also be able to demonstrate click by click audit trail for any type of enquiry.
  ii. The selected successful bidder should also be able to demonstrate Application server logs to capture all errors, warnings and exceptions that are generated in applications along with the time at which they occurred.
  iii. **Test data Archiving:** The selected bidder shall archive the results and other examination data for future references after a specified time, as per the requirement of GJUS&T, Hisar.

1.6 Assessment Platform Level

i. The proposed examination and question paper (both in English and Hindi languages, if required) generation software should be in-house developed by the bidder and the bidder must own the complete source code of the software being used for conducting the Compute Based Proctored Online Examination. They must have the copyright of the source code and all its components.

- The bidder should have all the necessary components and dependency of source e code of Computer Based Online Proctored Examination system in place so that any change required in any of the components of the software can be undertaken by their in-house technical team. Required skills should be made available to make necessary configuration changes. The major/minor configuration changes in software requested by the University must be made immediately.

- Different versions of Software code should be managed appropriately in a standard version control system within the organization.

- The Software code should have multiple backup systems in place so that anytime source code can be recovered in case of any disaster.

- The bidder should own the test cases and regression testing code to prove that they have done necessary testing of the software to scale up and conduct large scale assessments. Testing should not be limited to system features and functionality. The system used to conduct the examination must be tested for Performance, Security, Usability, High-Availability, Business Continuity and Disaster-Recovery.

- The bidder should have an in-house quality assurance group and strong quality management system to do quality check of the software.
- Proper security provision for source codes shall be maintained.
- The proposed software should be Govt. of India complaint CERT-IN certified for IT security.
- The bidder's software should have a facility to create question paper (in English and Hindi Languages, if required) securely at a designated place decided by authorized personnel of the University.
- Authoring module must allow for encryption and password protection. The Service Provider should provide the certificate of confidentiality with regard to contents of all the question papers.
- No personnel of Service Provider shall have direct or indirect access to any of the questions in the authoring process until the day of the examination the University authorizes the content to be accessed.
- The bidder should provide web application to monitor from the control centre at the University, the pre-examination, during examination and post-examination activities of the entire examination process.
- **Zero Loss of Data:** The Service Provider will ensure that there is no loss of response related data for any candidate or any other data related to the examination either from the client systems or the servers.
- **Security:** The computers administering the examinations should not be able to connect or access any other machine/parallel monitors for verbal prompting of answers by any other person other than the candidate or network other than the one on which the examination is being conducted. The presence of Desk Sharing Software, the video of the shared screen and any other application in operation shall also be captured if any candidate attempts to compromise on the integrity of the examination. That apart, the proctoring component shall be in such a manner that every detailed deviations and aberrations (malpractices) during the examination process for every single candidate shall be meticulously captured with event logs, audio and video evidences supporting the provisions of Indian Evidence Act and the IT act for the University to face any litigation at a later date where the service provider is expected to support the University for such cases when allegations are thrown.
- **Scalability:** Server and Software application should be designed for scale.
- **Stability and robustness:** Server and Software should be made secure for potential online attacks and threats.

- **Responsiveness of the system:** Response time of the server and software should be quick to enable the candidate to take the examination without any technical glitches.
- **Conduct of Examination and Security of Examination:** The successful bidder will also ensure maintaining the secrecy of the examination material with the support of the University. Any decision by the University in this regard shall be final.
- At any time before the submission of bids, the University may amend the tender by issuing an addendum in writing or by standard electronic means. If the amendment is substantial, the Bidder(s) shall be given reasonable time to make amendment or to submit revised bid and the deadline for submission of bids will be extended if required by the University. However, the University has the right to cancel or modify the tender based on the circumstances.
- Even though the bidders may satisfy the above requirements, they may be disqualified if they have:
- Given misleading or false representation or facts or deliberately suppressed the information to be provided in the forms, statements and enclosures of this document. Record of poor performance such as abandoning work, not properly completing the contract or financial failures/weaknesses.
- Confidential inquiry that reveals facts contrary to the information provided by the bidder.
- Confidential inquiry that reveals unsatisfactory performance in any of the selection criteria.
- If bidder is engaged in any activity such as conducting of coaching classes etc. which can influence the conduct of semester examination where there might be a possibility of an aid given to candidates to respond to questions.
- The bidder should have all the relevant facilities and logistics available to execute the work.
- The bidder must show and submit suitable emergency management plan during any crisis situations/redundancy of servers, switches, nodes additional center locations, student's data.
- The bidder shall be a single point of contact with GJUS&T, Hisar and shall be solely responsible for the execution and delivery of the work. The Bidder will provide the examination deliver software.

- In case of any delays/issues during the pre-examination process, during conduct of examination or during post-processing of examination responses, the Bidder should submit a detailed report to GJUS&T, Hisar, outlining the causes of the problem and the work around for the problem faced that was provided.