



SPS/NPTEL/ONLINE CERTIFICATION EXAM/001/2017

TENDER DOCUMENT FOR

NPTEL Online Certification Exams

Organizing institute: INDIAN INSTITUTE OF TECHNOLOGY MADRAS
Chennai, Tamil Nadu, India - 600036

Contents

Disclaimer	3
1. About NPTEL Online Certification - NOC	5
1.1 Brief scope of work of the Exam Partner:	5
1.2 General Instructions	6
1.3 Demonstration and Presentation	9
1.4 Deviations	9
2. Mode of Payment and penalty clauses	9
Evaluation of the Proposals	10
2.1 Technical evaluation	10
2.2 Commercial Evaluation	10
2.3. Final Evaluation.....	10
2.4: Eligibility criteria of Exam Partner	10
2.4.1 Technical proposal/Specification (including operational proposal)	11
2.4.2 Technical bid should contain	12
2.4.3 Commercial proposal/Specification.....	14
3. Expected value of tender and quantity of work:	14
4. Detailed scope of work	15
4.1 Administering the Examination	15
4.2 Post Processing	15
4.3 Dedicated Program Manager and Escalation	15
4.4 Time of exam and Exam Process	15
5. Conduct of Exam	15
5.1 Number of courses and unique question papers	15
5.2 Exam question paper creation.....	16
5.3 Exam Centers, Personnel, Infrastructure, Administration, Pre-exam processes, Exam Delivery and Post-examination Operations	16
1. Examination Cities	16
2. Exam Centers	16
3. Personnel	16
4. Infrastructure	17
5. Exam Delivery.....	18
6. Post-Examination Operations at every centre	21
7. Process Manual.....	21
Annexure - 1: Financial Information	23
Annexure - 2: Details regarding works of similar nature executed in the past 2 years.....	24
Annexure - 3: Projects of similar nature currently under execution	25

Annexure - 4: Performance Report for works referred in Annexures-2 and 3.....	26
Annexure - 5: Structure of the Organization.....	27
Annexure - 6: Details of Technical and Administrative Personnel to be employed for this work.....	28
Annexure – 7: List of cities where we have conducted exams in the past with candidate count	29
Annexure – 8: Compliance sheet/ Technical Bid	35
Annexure – 9: Specification of Online Programming Questions.....	40
Question page.....	40
Compile & Run	42
Submission page	46
Important points to be considered.....	46
Integrated Development Environment (IDE) on candidate machines.....	47
Annexure-10: Commercial / Price Bid (Prescribed format Only).....	48

Disclaimer

This Tender is not an offer by the Indian Institute of Technology Madras but an invitation to receive bids from vendors. No contractual obligation whatsoever shall arise from the tender process unless and until a formal contract is signed and executed by duly authorized office bearers of the NOC organizing team of Indian Institute of Technology Madras with the vendor.



भारतीय प्रौद्योगिकी संस्थान मद्रास चेन्नै 600 036
INDIAN INSTITUTE OF TECHNOLOGY MADRAS Chennai 600 036
भंडार एवं क्रय अनुभाग
STORES & PURCHASE SECTION
दूरभाष: (044) 2257 8290/8287/8285/8288 फ़ैक्स: (044) 2257 8292/2257 8082
Telephone : (044) 2257 8290,8287,8285,8288
email ID-adstores@iitm.ac.in



G. Chitrapavai
Deputy Registrar (Stores & Purchase)

Dated : 08.04.2017

Tender No. SPS/NPTEL/ONLINE CERTIFICATION EXAMS/001/2017

Due Date– 28.04.2017
before 2.00 p.m

Dear Sirs,

On behalf of the Indian Institute of Technology Madras, Tenders are invited for the service of

“NPTEL - Online Certification Exams”

Confirming to the specifications enclosed.

A.	LAST DATE for receipt of Tender	:	28.04.2017 before 2.00 p.m
	Date & Time Of Opening Of Tender		28.04.2017 at 3.00 p.m Venue: 3rd Floor,Stores & Purchase Section–Administrative Building
	Submission of Tender	:	<p>Both Technical Bid & Price Bid should be in separate cover with specification on the cover as “Technical Bid” & “Price Bid” as the case may be.</p> <p>Both the independent covers should be placed in one big cover and sealed with the superscription on the left hand side OPEN TENDER FOR “NPTEL - Online Certification Exams “due on 28.04.17 before 2.00 p.m.</p> <p>The tender cover should be sent to: Ms. V.G. BHOOMA, IRPS REGISTRAR INDIAN INSTITUTE OF TECHNOLOGY MADRAS CHENNAI - 600 036</p> <p>Right is reserved to ignore any tender which fails to comply with the above instructions. Tender should be sent either by REGISTERED POST ACKNOWLEDGEMENT DUE OR THROUGH MESSENGER. If the Tender is sent through Messenger, the same has to be dropped in the TENDER BOX marked Stores & Purchase kept for this purpose in the REGISTRAR’S OFFICE (1st Floor of Administrative Building) before 2.00 PM on due date 28.04.2017.</p> <p>If it is by post (Registered Post or Speed post only) the same should reach before 2.00 p.m. i.e on the last date 28.04.2017 otherwise it will be summarily rejected.</p> <p>THE INSTITUTE SHALL NOT BE RESPONSIBLE FOR THE LATE RECEIPT OF TENDER ON ACCOUNT OF POSTAL OR ANY OTHER DELAY. THE TENDER BOX WILL BE CLOSED EXACTLY AT 2 P.M. ON 28.04.2017.</p>

1. About NPTEL Online Certification - NOC

NPTEL is an acronym for National Programme on Technology Enhanced Learning which is an initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and Indian Institute of Science (IISc) for creating course contents in engineering and science. NPTEL is a curriculum building exercise and is directed towards providing learning materials in Science and Engineering by adhering to the syllabi of All India Council for Technical Education and the slightly modified curricula of major affiliating Universities. They are meant to fill the large gap that exists between the current expertise level of faculty in institutions of higher learning such as the IITs/IISc and those in private and other government aided engineering institutions in India.

The programme was begun in 2004 and after 13 years, NPTEL has more than 900 full fledged 40 hour lecture courses. The ultimate vision of this programme being the establishment of a Virtual Technological University, online certification courses were introduced wherein, enrolling and following the course is open to anyone around the world, while obtaining a certificate requires the conduct of a proctored certification exam, for which exam partners are being sought.

Below table gives actual number of registrations since Mar'2016 and projection of numbers till Mar'2019, which may vary significantly. List of centers wherein exam conducted so far is given in the Annexure 7.

YEAR	No. of Candidates		No. of Courses	No. of cities
	Registered	Projection		
Mar-Apr'2016	17293		64	62
Sep-Oct'2016	31444		104	80
Mar-Apr'2017	44250		130	75
Sep-Oct'2017		55000	160	85
Mar-Apr'2018		70000	170	85
Sep-Oct'2018		85000	170	90
Mar-Apr'2019		100000	170	100

1.1 Brief scope of work of the Exam Partner:

The Exam Partner (EP), NPTEL offices and course instructors of the online courses will be required to work together to conduct the Online Certification exam for that particular course. The Exam Partner (EP) shall provide the technology and the operational solutions for the conduct of the online examination while the faculty coordinator will provide the question paper.

The EP is expected to run the NPTEL exams on the dates and times specified. The exams are likely to be conducted in semester basis in the month of March to April / Sep to Oct each year

1.2 General Instructions

In this tender document, Vendor, Bidder, Bidding agency and Exam Partner (EP) mean one and the same. The bidding agency shall be a single point of contact with the NPTEL office and shall be solely responsible for the execution and delivery of the work.

Date, Time and Venue of Pre-Bid Meeting:

17.04.2017 – Monday, 3pm NPTEL Web studio, Third floor, IC&SR building, IIT Madras

Date, Time and Venue of Opening of Technical Bids:

28.04.2017 – Friday, 3pm, 3rd Floor, Stores & Purchase section – Administrative Building, IIT Madras

Date, Time and Venue for Demonstration/Presentation :(Technically qualified vendors only)

03.05.2017 – Wednesday, 2pm NPTEL Web studio, Third floor, IC&SR building, IIT Madras

Earnest Money Deposit (EMD) & Performance Bank Guarantee

1. EMD of Rs.2,00,000/- has to be paid by means of DD only along with the tender.
2. Demand Draft may be drawn in favour of “**The Registrar, IIT Madras**” payable at Chennai.
3. **The EMD should be put in a separate cover and should be enclosed in the technical bid cover only, else the bid will be rejected due to non-enclosure of EMD.**
4. This Earnest Money will be returned to the unsuccessful tenderers after the final disposal of the tenders. **EMD will not carry any interest.**
5. The EMD along with Performance Guarantee will be retained in the case of successful tenderers till the warranty period.
6. EMD will not be waived under any circumstances.
7. EMD will be forfeited in the case of non-execution of the order within the due date.
8. **Non submission of EMD will lead to rejection of tender at the opening stage itself.**
9. Performance guarantee for Rs.8,00,000/- has to be submitted in addition to above EMD by way of DD/ bank guarantee **by the successful bidder only.**

Marking on Technical Bid

1. The technical Specification for this tender is given from **Para 1.3.1 onwards**. The tenderer shall go through the specification and submit the technical bid.
2. The Technical bid & Eligibility Criteria should be submitted in the proforma given in the **Annexure 1,2,3,4,5,6 & 9.**
3. The technical bid cover of the various items should clearly be marked with the **item name.**
4. The technical bid covers of the various items should be put into one big cover **superscribed “Technical Bid”.**
5. All technical bid should have the page-wise **heading as “Technical Bid” and page no.** in all pages with seal and signature of authorized signatory. The total no. of pages should be mentioned at the last page of the documents.
6. The technical bid should consist of all technical details along with catalogue, and relevant terms and conditions.

Marking on Commercial/Price Bid

1. The Commercial proposal for this tender is given in the **Para 1.3.3**. The tenderer shall go through the specification and submit the Commercial bid
2. Price bid should be submitted in the prescribed proforma as per **Annexure 10**.
3. The price bid cover of the various items should clearly be marked with the **item name**.
4. The price bid covers of the various items should be put into one big cover **superscribed "Price Bid"**.
5. All Price bid should have the page-wise **heading as "Price Bid" and page no.** in all pages with seal and signature of authorized signatory. The total no. of pages should be mentioned at the last page of the documents.

Tender document fee

1. **The tender document fee of Rs.525/-(inclusive of VAT @ 5%) (Non-refundable)** should be drawn in the form of DD (obtained on or after the date of advertisement) in favour of "**The Registrar, IIT Madras**" payable at Chennai, and the same should be kept in separate cover written "**Tender fee** " on the top and should be placed inside the technical bid cover. As no separate tender documents will be issued by us, the same can be downloaded from our institute website: <http://tenders.iitm.ac.in> (or) <https://eprocure.gov.in/cppp/tendersearch>

Preparation of Tender:

1. The Schedule to the Tender form should be returned intact whether you are quoting for any item or not. Pages should not be detached and when items are not being tendered for, the corresponding space should be defaced by some such words as 'not quoting'.
2. In the event of space on the schedule form being insufficient for the required purpose, you have to submit the rates in the letter head of your company clearly mentioning Sl.No. and other relevant particulars. Each such additional page must be numbered consecutively, bear the Tender Number and be fully signed by you. In such cases reference to the additional pages must be made in the tender form.
3. If any modification of the schedule is considered necessary, you should communicate the same by means of a separate letter sent with the Tender within due date.
4. You should quote your product as per our specification requirements by mentioning our requirements and your offer side by side and the rate should be in total as per our requirements. We will not make any calculation if you have mentioned the rates of items separately.
5. The offer/bids should be submitted in two bid system i.e. Technical Bid and Price Bid in a separate cover.
6. At any time before the submission of bids, NPTEL Coordinators may amend the tender by issuing an addendum in writing or by standard electronic means. The addendum will be put up on the <http://tenders.iitm.ac.in> website and will not be communicated through the newspaper and bidders will have to check the website for any updates. The addendum will be binding on them. If the amendment is substantial, 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 by the NPTEL Coordinators and this will be decided by the NPTEL coordinators.
7. All disputes arising out of this process shall be subject to the jurisdiction of Madras High court, **Chennai, Tamil Nadu**. The Chairman, Centre for Continuing Education (CCE), IIT Madras reserves the right to award the work or cancel the award without assigning any reason whatsoever. In case of differences, if any, the decision of the Chairman, CCE, IIT Madras, shall be final.

8. All relevant information as specified in the Technical and Commercial Proposals including the contingency plans, and Annexures-1 to 8 should be furnished by the bidders. The bidder is advised to attach any information that is necessary with regard to the capabilities to establish that the bidder is capable in all respects to successfully complete the envisaged work. The bidders are cautioned that not giving complete information called for or deliberately suppressing the information may result in the bidder being summarily disqualified.
9. The Tenders should be typewritten. The name and signature of bidder's authorized person should be recorded on each page of the application. All pages of the tender document shall be numbered and submitted as a package along with forwarding letter on agency's letter head.
10. The offer must remain open for a minimum period of **90 days** from the date of opening of the tender, within which the bidders cannot withdraw their offer.
11. Reference, information and certificates from the respective clients certifying technical, delivery and execution capability of the bidder should be signed and the contact numbers of all such clients should be mentioned. The NPTEL coordinators may also independently seek information regarding the performance from the clients.
12. Even though the bidder may satisfy the qualifying criteria, the bidder is liable to disqualification due to record of poor performance or not being able to understand the scope of work etc.
13. The bid documents must be complete in all respects. Use the format given in this document for the preparation of bid response. The response should be brief and up to the point. Failure to comply with any of the instructions or conditions stated in this document or offering unsatisfactory explanations for non-compliance will likely to lead to rejection of offer. Further the Client reserves the right to reject all the bids without assigning any reason.
14. In the event of the date of opening of tender being declared a closed holiday for the Indian Institute of Technology Madras the due date for opening will be following working day
15. FAX/Email/Telegram quotations will not be accepted.
16. Please mention the CST/VAT No and Area Code failing which your quotation will be rejected. All of your future correspondences including Invoices should bear the CST/VAT No. and Area Code.
17. **Quotations should be submitted in Sealed Cover** only. Unsealed/improperly sealed covers will be summarily rejected. Quotes given by the tenderers in their own format/letter heads will not be considered at all.

Signing of Tender:

The Tender is liable to be rejected if complete information is not given therein or if the particulars and date (if any) asked for in the schedule to the Tender are not fully filled in or not duly signed/authenticated. **Each page of the tender documents required to be signed and bears the official seal of the tenderers.**

Opening of Tenders:

You are at liberty to be present or authorize a representative to be present at the opening of the tender at the time and date specified in this document.

Right of Acceptance:

Indian Institute of Technology Madras, Chennai 600 036 does not pledge itself to accepting the whole or any part of the Tender or portion of the quantity offered.

Communication of Acceptance:

Acceptance by the Purchaser will be communicated by Post, and the Company's acceptance should be communicated to us formally in writing.

Tenderer shall submit along with his Tender:

- I. Name and full address of the Banker and their swift code and PAN No.
- II. Proof of registration with sales tax /VAT authorities like registration number, range etc. in clear terms.

Period of Service:

The period of service is for two years starting from June 1st 2017.

1.3 Demonstration and Presentation

The vendor will be required to give a demonstration of the following for each submitted technical bid:

1. Question paper authoring software
2. Client and server software for online examination

The vendors may be required to make a presentation on their capabilities to conduct the online/offline examinations as per the conditions specified above.

1.4 Deviations

Any deviations from the scope of work as outlined above should be mentioned clearly with suitable justification by the vendor in a separate sheet under the heading '**Deviations**'. **This sheet should be included in the technical proposal.** If no deviations are mentioned, then it will be assumed that the vendor has accepted the scope of work in its entirety as mentioned in the tender document and is bound to deliver the same.

2. Mode of Payment and penalty clauses

The payment to the EP shall be made in Indian rupees and shall be paid only after the successful completion of the entire work without any delays or errors. **No advance payment shall be made.** The successful bidder has to **sign an agreement** on non-judicial stamp paper which shall contain **penalty clauses** related to **liquidated damages** on account of **delays, errors, cost and time overruns** etc. If the bidder fails to execute the contract, the NPTEL committee shall have the liberty to get the work done through any other agency with full cost recoverable from the bidder in addition to damages and penalty.

Failure on exam day: For every 1 hour delay in start of exam, 1/3 of payment for candidates at center will be

deducted from total payment.

Delay in release of accurate results in correct format – 10% deducted for every day delay in results with a cap at 50%

In case of any delays/issues during the pre-exam processes, during conduct of exam or post processing of exam responses, the EP should submit a detailed report to NPTEL outlining the causes for the problem and the work around for the problem faced that was provided.

Evaluation of the Proposals

Selection of the vendor shall be based on Quality and Cost Based Selection (QCBS). The proposals will be evaluated by taking the following factors into consideration:

2.1 Technical evaluation

Technical evaluation will be based on the points agreed to in the compliance sheet in Annexure 8 (Total 100 points):

Technical evaluation of the offers shall be carried out by a sub-committee constituted specially, for this purpose by NPTEL Office, IIT Madras. The Technical Evaluation Committee may call the bidders for presentation or clarifications to assess the understanding of the bidder regarding the scope and magnitude of the work. However, whether to call the bidder for discussion or not is at the sole discretion of the NPTEL Office, IIT Madras.

2.2 Commercial Evaluation

The commercial bids of only those bidders who have been found to be technically eligible (with scores higher than 70 points from Technical evaluation) by the constituted sub-committee shall be opened. The commercial bids shall be opened in the presence of the eligible bidders' or their representatives. The commercial scores of the bidders would be normalized on a scale of 100, with the lowest quote getting a score of 100 and the rest being awarded on a pro-rata basis.

2.3. Final Evaluation

Final selection of the vendor shall be based on Quality and Cost Based Selection (QCBS) with 70 % weightage for technical evaluation and 30 % weightage for commercial evaluation.

2.4: Eligibility criteria of Exam Partner

a) The bidding agency should be registered in India and should be operating in India for at least the last **5** years offering similar services. They should have a minimum turn-over of **Rs. 250 crores** in the last **2** years. The details in this regard to be submitted in Annexure 1 & 2.

b) The bidding agency should own the copyright of the source code being used for conducting the computer based online examinations. The agency should be able to make changes as and when required in any of the components of the software. Attach proof in this regard.

- c) The agency should be certified for compliance with established Information Security Standards such as ISO 27001. Duly signed copy of ISO 27001/27002 certificate should be submitted along with the technical bid.
- d) The bidding agency should have authorized and globally accepted software certification, CMMi Level 5.
- e) The agency should have an in-house quality assurance and product testing team with proven and robust quality management processes required for conducting the computer based online examination.
- f) The agency must employ multiple backup systems including offline backups to securely maintain the software and its corresponding source code.
- g) The agency should design a high-performance system and conduct performance exams to verify successful achievement of high concurrency, fast response time, and long-stress duration required of the system used to conduct the examination. Results of such performance exams should be made available to the client as and when required. Sometimes these exams may have to be conducted within a short notice and with strict deadlines.
- h) The agency should design a highly secure system and conduct security tests to verify that there are no vulnerabilities that can make the system susceptible to attacks. Comprehensive testing of source code and the infrastructure must be carried out. Results of such security tests should be made available to the client, when requested.
- i) There should be suitable emergency management plans towards any crisis situations/redundancy of servers, nodes additional center location, candidates' data. **The vendor has to clearly indicate these plans in the technical proposal.**
- j) The agency should be able to support the entire solution (across India) on a 24 x 7 basis with a maximum response time of 3 hours.

2.4.1 Technical proposal/Specification (including operational proposal)

The technical proposal should consist of bids for all three options given below:

1. Computer based Programming testing capability
2. Computer based Non-programming testing capability
3. Offline (paper/pen) testing capability.

Hence both technical and commercial bids need to be submitted for each of the above three testing capabilities.

2.4.1.1 Computer based Programming testing capability

Please refer Annexure 9 for complete details on the requirements and design of the testing platform.

2.4.1.2 Computer based Non-programming testing capability

This includes creation and support for a maximum number of the following forms of testing:

- Multiple choice questions
- Multiple select questions (with more than one correct option) with partial marking option when a subset of the correct options is chosen
- Option for negative marking
- Fill in the blanks –
 - Numerical type - with answer that matches an exact value or a range of values
 - Alphanumeric type whose answer matches an exact value or a set of values with option to specify if the answer should be case sensitive or insensitive with exact/set of matches/partial match
- Drag and Drop / match the following
- Order the sequence of actions
- Identification of hot spots
- Essay type questions – which will be manually evaluated

The vendor must be willing to consider other formats as requested by the faculty coordinator of the online course from time to time.

2.4.1.3 Offline/Paper-Pen testing capability

This includes securing all the data/contents/materials for conducting the exam.

Question papers will be given to the exam partner for the courses that have offline exam – which will be printed on the day of the exam, by the EP, and given to the candidates along with the answer sheets. Answer sheets will be provided by NPTEL to the exam partner ahead of time, and it is the EPs responsibility to distribute to centers across country as necessary. The EP will then coordinate collection of the same from the various centres and hand over the used as well as unused answer sheets to the NPTEL head office in a secure manner.

For all types of exams, good quality rough sheets of A4 size, 75 gsm or better, to be provided, as per requirements of candidates

2.4.2 Technical bid should contain

1. A technical proposal that details the capabilities of the following:

- Question Paper Authoring Software: Simple and easy to handle software (Windows/Linux based) to be made available to the course instructors (SME) which will be installed on their machines locally. The SME should be able to create the questions for the final exam using this software with the least amount of training and the software should be intuitive enough with a simple UI to be used by any SME who is situated anywhere in India or the world.
- A bundling software (or equivalent) to be available for installation at the main NPTEL office which will collect all the question papers from various SMEs for a particular exam date and allow review of the

same.

- There must be a simple interface for to and fro interactions between the NPTEL main office and the SMEs – keeping the interaction about the question papers secure.
- Method to encrypt the bundle of question papers and transfer to exam partner which should again be secure without any of the EP personnel having access to the same unless authorized by NPTEL on the day of the exam.
- Examination Software (Client and Server) – which includes software for the conduct of the exam in the best possible way and software to monitor the status during the conduct of the exam across centres.
- Software that handles post examination operations that includes a consolidated marksheet of all candidates who appeared for the examination, detailed response sheet for every candidate, the audit logs of every candidate recorded during the exam, analytics and basic statistics on the responses obtained.

2. An operational proposal that gives the following details:

- The number of nodes per city that the vendor has qualified as per their process (Please check Annexure 7 for the list of cities where NPTEL exams have been conducted from March 2016 – April 2017 and state how many of these are part of the vendor city list).
- Please also indicate the number of nodes per city in which you have conducted an exam.
- Note that for the qualified nodes you MUST have in place your own dedicated exam centres or an agreement with the institute/college providing the infrastructure, Proof of agreement to be produced if requested.
- The projected capability in terms of the number of audited seats in each city that the vendor will be able to identify by the end of June 2017.
- The availability of adequate number of technical personnel for conducting the examination in the required number of exam centers. The EP has to submit a complete list of such personnel one week before each exam.
- Properly trained invigilators qualified to monitor the exams (who are not currently studying in college) to be made available.
- The process followed by the vendor for qualifying an exam center
- The procedures followed for the pre-exam, exam and post-exam operations including the capability of the vendor to set up a secure Master Control facility where the post-exam data will be uploaded.
- Information on EP personnel who will have access to exam questions/data in any form during any stage of the exam processing.
- Availability of Audit Log.

3. A statement that gives the following details of the exams conducted by the vendor in the past 12 months:

- (a) Total number of candidates appeared for each examination
- (b) Total number of candidates across all the cities in a single session

(c) Number of sessions on a day of examination

(d) Number of days of examination.

(e) Capability to conduct Multi session Flexible date exam- Exam will be available over a period specified by NPTEL, candidate can choose a center and session to take the exam. Give cost per candidate

(f) Capability to conduct exams in locations outside India – Give list of locations and cost per candidate

4. A statement that outlines the three largest exams, if any, committed to by the vendor over the period of Apr 2017 - Mar 2018. This should indicate the expected number of candidates for each exam as well as the expected number of candidates in a single session. The vendor may withhold the details of clients for these future exams if that information is confidential.

2.4.3 Commercial proposal/Specification

The commercial proposal should contain the financial bid for the three types of exams – Computer based online Programming test, Computer based online Non Programming test & Offline paper/pen test.

The commercial proposal should give the details of the charges per registered candidate AND the minimum number of candidates at this rate at a center.

The charges per registered candidate should include the cost towards

- a) charges paid to their technical personnel by the EP during vetting of exam centers
- b) charges paid by the EP to the centre for hiring the infrastructure
- c) charges for providing partitions at the Exam Centers
- d) deployment of the Company Personnel, i.e. the Test Administrators and Company representatives at the Exam Centers and the technical personnel at the Master Control Rooms
- e) charges involved in administration of Exam, payment to other personnel involved in the conduct of the examination, payment to exam invigilators
- f) other incidental expenses

A clear break-up as indicated in (a) to (f) should be provided. The applicable taxes should be indicated in the proposal. For the sake of uniformity across all the exam centers, the EP is advised to maintain uniform rates for infrastructure for all the exam centers and adhere to the same without any deviation.

In the event of any unforeseen circumstances, examinations may have to be held in buffer sessions decided by mutual consultation between NPTEL and the EP. It may be noted that if any examination has to be conducted on the buffer date due to any technical or non-technical problems from vendor's side, the vendor has to bear the cost of the conduct of the examination as quoted in the commercial proposal.

3. Expected value of tender and quantity of work:

Year	No. of Candidates
Sep-Oct' 2017	55000
Mar-Apr' 2018	70000
Sep-Oct' 2018	85000
Mar-Apr' 2019	100000

Projections are based on our previous experience - which is approximately 10-15% increase over the earlier exams. The quoted costs will have to be valid till May'2019.

4. Detailed scope of work

4.1 Administering the Examination

The procedures followed for admitting the candidate into the exam hall, the processes to be followed during the duration of the exam and after the exam is completed, need to be described clearly.

4.2 Post Processing

The evaluation of the exam, if online, needs to be done within 3 days and results shared with NPTEL office; For offline exams, within 10 days the answer sheets need to be handed over.

Audit logs for each and every candidate that covers the computer activity done by him/her should be shared with the NPTEL office along with the results.

4.3 Dedicated Program Manager and Escalation

The EP should provide NPTEL with a dedicated Program manager who will interface and provide support right from the start of the course run until the exams are completed and results handed over.

There should be a tracking system with suitable mechanism for raising tickets and closure of outstanding issues along with the escalation matrix provided.

4.4 Time of exam and Exam Process

Timelines for various activities related to the exam will be agreed sufficiently in advance between NPTEL and the EP.

5. Conduct of Exam

The following sections list the features in the Online Examination that the EP is expected to provide through their technology and operations, and the capabilities of the EP needed for delivery of the Online Examination:

5.1 Number of courses and unique question papers

Every semester 150-200 subjects may be offered and question papers for each of these subjects will be created.

5.2 Exam question paper creation

1. The EP would provide the Question Paper Authoring software and train NPTEL office staff on Question Paper Authoring and Question Pack Generation.
2. Each SME to be provided easy access to use Front End for QP creation and secure way of Question Pack Generation for NPTEL offices.
3. The EP should be **willing to modify** the Question Paper Authoring Software as per the requirements of the NPTEL committee. These requirements will be communicated to the EP as and when required, but well before the beginning of the actual authoring process.
4. Provision of review mechanism of QP for back & forth between SMEs & NPTEL office.
5. The authoring software must be modified to include new features as requested by the faculty instructors of the courses, as much as is possible.
6. The Question Paper Authoring software must allow for creating multiple versions of a question paper by jumbling the questions and the choices for a question.
7. Authoring software must allow for encryption and password protection. The EP should provide the certificate of confidentiality with regard to contents of all the question papers.
8. No personnel of EP should have direct or indirect access to any of the questions in authoring process until the day of the exam when NPTEL authorizes the content to be accessed.

5.3 Exam Centers, Personnel, Infrastructure, Administration, Pre-exam processes, Exam Delivery and Post- examination Operations

1. Examination Cities

EP will be provided with list of cities with probable number of candidates. EP will confirm the same for opening in the form. Should be flexible to add more cities/alter cities & candidates as required. The list of cities with the number of candidates who appeared in the last 6 runs of NPTEL exams is given in Annexure 7 along with the tentative list of cities in which the NPTEL Online Examination may be conducted in the future. The final list of cities will be identified by the NPTEL Coordinators for every run based on registrations and request and EP will be notified sufficiently in advance regarding the same.

2. Exam Centers

The EP would arrange to identify Exam Centers that have been certified and audited by the EP. A College may have one or more Exam Centers. The Internal Training Facilities (ITF) of the EP may be used as exam centers.

3. Personnel

- The EP would provide adequately trained Test Administrators (TAs) in every Exam Center, who should be the staff of the EP, temporary staff of EP are not acceptable.
- There will be one TA for every 100 candidates and part thereof at an Exam Center.

- The TAs will administer and provide the technical support for maintaining the servers used in the conduct of examination at the Exam Center.
- The EP will also ensure availability of at least one adequately trained Network Maintenance Engineer at each Center - 1 person per 200 candidates.
- The EP would identify a senior staff member of the Company as the Center Head (CH) at each College or ITF. The CH will be responsible for supervising the Technical Personnel of the EP at all the Exam Centers in the College or ITF.
- The CH will be the contact person of the EP for the College Personnel and NPTEL office staff including Institute Representatives (IRs) to interact regarding the conduct of Online Examination at the College or ITF.
- There will one Admin person from the EP who will ensure a comfortable experience for the candidate and the people accompanying him/her by ensuring facilities such as Directions and sign boards to exam halls, clean and well maintained toilets, availability of a refreshment centre within the premises, a waiting room for accompanying people, adequate parking facility within the premises are available. This person will also ensure last mile connectivity to the centre by managing local transport from the main roads.
- Invigilators: Proctors of the exam will be chosen by the EP, who have to be well trained and capable of invigilating and are aware of the responsibilities/tasks for the same. (College students will not be permitted to be invigilators). There will be one invigilator for every 30 candidates and at an Exam Center with less than 20 registered candidates, there will be a minimum of 2 Invigilators. The EP should train the Invigilators for invigilating the Online/offline Examination. There will be two Technical Staff from the College or the ITF at each Exam Center to assist the TAs from the EP. The honorarium for all the personnel involved in the exam conduct will be paid by the EP.

4. Infrastructure

- All computers, servers & monitors should be latest configuration, in conformance with the specifications required to host the exam software and as agreed between NPTEL & EP.
- The EP should arrange for the servers necessary, and any necessary backup to conduct the examination at each Exam Center.
- The College or the ITF should arrange for the client systems necessary to conduct the examination at each Exam Center. One client system will be available for every candidate registered at each Exam Center. There will be a reserve pool of client systems. The number of systems in the reserve pool will be at least 10% of total number of registered candidates in a session at an Exam Center. However, there will be a minimum of 10 client systems in the reserve pool at an Exam Center with less than 100 candidates in a session
- There must be adequate spacing (**of at least 2 ft.**) between two adjacent seats. In addition the EP must arrange for providing **partitions** of appropriate size between the adjacent seats.
- The exam software must be designed to handle partially visually handicapped candidates with ability to magnify/zoom content on the screen.

- Arrangements for Orthopedically handicapped candidates should also be handled by the EP at the centres.
- Lighting, ventilation & comfortable temperature must be ensured within the exam hall.
- The College or the ITF should also ensure the availability of a functional local area network and a power backup generator. All systems and network equipment at each Exam center should be provided with functional UPS. Uninterrupted power should be made available for the period of each session and for 30 minutes prior to and after each session on the day of examination.
- Clean and well maintained toilets, availability of a refreshment centre within the premises, a waiting room for accompanying people, adequate parking facility within the premises must be available.

5. Exam Delivery

The proposal submitted by the vendor should indicate the manner of Exam delivery and the limits to which the server has been tested in terms of number of client systems connected simultaneously without loss of performance in the examination environment.

5.1. Pre-examination processes

- The EP must make arrangements so that static mock exams can be conducted by the interested candidates, if necessary using mock question papers provided by the NPTEL team. The static mock exams should be available to all the applicants at least two weeks before the actual examination so that the candidates can have practice sessions.
- URL for the mock exam should be sent to every registered candidate by email and sms as soon as the mock exam is available by the EP.

Mock tests at the centre – day prior to exam

The day prior to the actual exam, NPTEL will depute their representatives to be present at each and every centre where the exam is to be conducted. A complete mock exam should be conducted at each of these places in the presence NPTEL personnel whereby each and every machine is logged into and switched on to verify the following:

- if the exam software is working and launching
- if data attachments are opening for courses that have them
- if the candidate seating is acceptable such that no two candidates having the same subject are seated adjacent to each other
- for a programming exam, to check if a test code is getting compiled and executed

NPTEL will have the final say in re-allocation of candidates if the arrangement is found to be unsuitable during the mock test.

5.2. Distribution of Question Packs to the Exam Centers

The Online Examination Software developed and used by the EP must ensure confidentiality and protection of the QP content both at the Master Control Room as well as during transfer over a network. The loading of a QP into the Online Examination Software on the servers at an Exam Center must be password protected. No personnel of EP must have access to the same unless authorized by NPTEL.

5.3. Invigilation

Announcement of instructions to the candidates, admit card check, candidate identity verification, attendance recording and collection of undertaking given by candidates will be carried out by Invigilators. Attendance sheets, Instruction sheets and other relevant documents should be provided by EP. Invigilators should also ensure proper conduct of examination and ensure that candidates use no unfair means during the exam.

The Online Examination Exam Software should include the following features:

5.4. Details to be displayed on candidate console as part of Exam software

- Display of details of candidate (including a photograph) upon login for verification by the candidate and invigilators.
- Display of instructions to candidates upon login and before start of examination. The candidate must be able to retrieve instructions at any time during the examination as well. The software must obtain concurrence of the candidate having read the instructions before start of examination.
- Start and closure of the examination at scheduled time (candidates must not be able to start their examination even if they login before the scheduled time).
- Display of remaining time available
- Display of candidate details on the screen (including a photograph if available) during the examination.
- Viewing the complete question paper or a section in the case of sectional papers.
- Display of a selected question with choices of answers for multiple choice type questions.
- Display of a selected question and a virtual numeric keypad for numerical answer type questions.
- Marking/unmarking a question (answered or unanswered) for review.
- Display of status of questions
- Switching between sections in the question paper (if applicable).
- Provision of Data tables
- Provision of online scientific calculators.
- Exit from exam software will be only as per the settings given by NPTEL. Candidates cannot exit at any time before the duration given by NPTEL.

5.5. Zero Loss of Data

The EP 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.

5.6. Generation of Event based Log (Audit Trail)

The EP will ensure that the event (click and keyboard) based log (audit trail) for every candidate will be generated and saved on the servers. The audit trail for every candidate should be provided at the end of

session in the format agreed upon. The EP should not keep/have any audit trail data with them post handover.

5.7. Saving of Response

The EP will ensure that the click-based and keyboard based activity of every candidate will be saved on servers. This means that the answer responses for each question at that click time will be only saved/updated. The question clicks by candidates without a response are also recorded in the database. The final response data in a format specified by NPTEL should be uploaded to the server in the Master Control Room within 30 minutes of the completion of each session of examination. The EP will not keep/have any response data with them post handover.

5.8. Security

The computers administering the examinations should not be able to connect or access any other machine or network other than the one on which the examination is being conducted. The computers shall be sanitized (during pre-examination preparations).

5.9. Monitoring

The server shall have the capability to start the examination for all candidates, monitor the status of each candidate (whether logged in, examination started, idle/active, disconnected, submitted, etc.), award additional time for candidates (only with approval of NPTEL) and close the examination. The server MUST maintain an audit trail of every operation on the server. All server-side audit trails are also the property of NPTEL and shall be handed over at the end of the examination.

5.10. Master Control Facility

There will be one or more Master Control Facilities fully operated by the EP in a Data Center, which should be accessible for monitoring by NPTEL. The activities at each Exam Center will be monitored in the Master Control Facility. At the Master Control Facility, the EP should provide at least 2 technical personnel who are well versed with the Online Examination Software. These personnel will interact with the CH in each of the Exam Centers and the overall project manager. A secure and highly reliable server should be set up in each Master Control Facility. At the end of examination in a session, the candidate response data and audit trail data from each of the Exam Centers will be uploaded to the servers at the Master Control Facility.

5.11. Conduct of Examination and Security of Examination Centers

The EP and the College or the ITF shall ensure that the Exam Centers are kept in examination-friendly environments with no disturbances from external sources. The EP will also ensure the secrecy of the examination material and will support NPTEL in maintaining the secrecy of the examination material. Any decision by the NPTEL in this regard shall be final. The EP will also ensure that the examination is held in a candidate-friendly environment and enough security arrangements have been made to ensure the safety of examination material and the persons involved in the conduct of examination.

6. Post-Examination Operations at every centre

Individual candidate-wise, item-wise responses and audit trail will be captured and loaded into a physical storage medium such as CDs or pen drives. The CDs or pen drives will be handed over to NPTEL. The data will also be uploaded to a server at the Master Control Facility. After the confirmation of proper transfer of data to the server at the Master Control Facility, the TAs will delete the responses and audit trails in the hard disks of any local server (if applicable). The EP will maintain the data in a secure manner till instructed by NPTEL to delete the same.

7. Process Manual

The detailed Standard Process Manual (SPM) will be prepared by the EP and submitted to NPTEL for approval two weeks prior to the exam.

ACKNOWLEDGEMENT

It is hereby acknowledged that I/We have gone through all the points listed under “Specification, Guidelines, Terms and Conditions” of tender document. I/We totally understand the terms and conditions and agree to abide by the same.

**SIGNATURE OF TENDERER ALONG WITH
SEAL OF THE COMPANY WITH DATE**

Annexure - 1: Financial Information

Details furnished below are to be supported duly by figures in Balance Sheet, Profit & Loss Account for the last 5 years as certified by the Chartered Accountant and submitted by the bidder to the Income Tax Department

Details	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017
1) Gross annual turnover for works of similar nature					
2) Profit/Loss					
3) Financial position					
a) Cash					
b) Current assets					
c) Current liabilities					
d) Working capital					
e) Current Assets to Liabilities Ratio					

Documents to be attached along with the above statement:

- a) Up-to-date Income Tax Clearance Certificate
- b) Certificate of Financial soundness from the bankers of the Bidders
- c) Financial Arrangements for carrying out the proposed work
- d) Any other relevant documents

(Signature of Bidder)

Annexure - 4: Performance Report for works referred in Annexures-2 and 3

(Please furnish the following details for each individual project from the Client)

1. Name and location of project:
2. Agreement No.:
3. Estimated Cost
4. Tendered Cost:
5. Date of Start:
6. Date of Completion
 - a) Stipulated date:
 - b) Actual date:
7. Performance report by client:
 - a) Quality of Work: (Excellent/Very Good/Good/Fair/Poor)
 - b) Approach to problem solving: (Excellent/Very Good/Good/Fair/Poor)
 - c) Resourcefulness: (Excellent/Very Good/Good/Fair/Poor)

Date:

(Signature of the client with seal)

Annexure - 5: Structure of the Organization

1. Name and address of bidder :
2. Telephone No./Fax No./Email address :
3. Legal status (Attach copies of original document defining the legal status).
 - a) An Individual/ Consortium:
 - b) A Proprietary/ Partnership agency:
 - c) A Trust:
 - d) A Limited Company or Corporation:
4. Particulars of Registration with various Government bodies & Statutory Tax Authorities (attach attested photocopy)
 - a. Registration Number:
 - b. Organization/Place of registration:
 - c. Date of validity:
5. Names and titles of Directors & Officers with designation to be concerned with this work with designation of individuals authorized to act for the organization.
6. Were you or your company ever required to suspend the work for a period of more than six months continuously after you commenced the works? If so, give the name of the project and reasons for not completing the work.
7. Have you or your constituent partner(s) ever left the work awarded to you incomplete? If so, give name of the project and reasons for not completing the work.
8. Have you or your constituent partner(s) been debarred/black listed for tendering in any organization at any time? If so, give details.
9. Area of specialization and Interest
- 10 Any other information considered necessary but not included above.

Annexure – 7: List of cities where we have conducted exams in the past with candidate count

Exams conducted in March-April 2016: Number of courses - 64

Cities	Mar-16				Apr-16		
	Offline	Online	Online Prog	Total	Offline	Online	Total
Ahmedabad	3	130	57	190	13	52	65
Alappuzha	4	493	23	520	9	20	29
Amaravathi	1	113		114	NA	NA	NA
Aurangabad	3	15		18	1	21	22
Bengaluru	8	321	38	367	13	129	142
Bhalki		6	39	45	NA	NA	NA
Bhopal		145	40	185	5	31	36
Bhubaneswar	1	41	2	44	8	22	30
Chandigarh		87	17	104	6	59	65
Chennai	25	1310	197	1532	190	726	916
Coimbatore	5	262	109	376	32	140	172
Dehradun	14	74	10	98	5	19	24
Delhi	8	465	81	554	24	163	187
Dindugul	NA	NA	NA	NA	1	39	40
Durg		90	37	127	NA	NA	NA
Ernakulam	4	102	10	116	25	79	104
Erode	2	115		117	NA	NA	NA
Ghaziabad		301	41	342	13	61	74
Greater Noida		150	13	163	7	37	44
Gurgaon	NA	NA	NA	NA	23	10	33
Guntur		145	18	163	NA	NA	NA
Guwahati	2	37	4	43	1	13	14
Haldia		19	12	31	16	63	79
Hosur	4	79	49	132	NA	NA	NA
Hubli		74	10	84	NA	NA	NA
Hyderabad	2	159	37	198	4	57	61
Jaipur	2	96	16	114	6	23	29
Kanpur	1	193	31	225	NA	NA	NA
Kolkata	6	86	13	105	12	64	76
Kollam		70	2	72	NA	NA	NA
Kovilpatti	1	445	5	451	42	44	86
Lucknow	1	96	18	115	5	55	60
Madurai	12	283	48	343	72	422	494
Mangalore	2	44	7	53	2	12	14
Meerut		42	29	71	NA	NA	NA

Mumbai	15	424	41	480	56	176	232
Nagercoil	3	266	26	295	NA	NA	NA
Nagpur		33	3	36		8	8
Namakkal		153		153	NA	NA	NA
Noida		127		127	NA	NA	NA
Palakkad		243	17	260		17	17
Patna		31	17	48	4	17	21
Proddatur		150	60	210	9	51	60
Puducherry	37	648	65	750	39	31	70
Pune	5	508	251	764	12	171	183
Raipur	1	98	7	106	4	29	33
Ranchi	1	34	4	39	NA	NA	NA
Ratnagiri		13		13	NA	NA	NA
Salem		243		243	NA	NA	NA
Srinagar		9		9	NA	NA	NA
Tekkali		3	10	13	NA	NA	NA
Thoothukudi		404	16	420	NA	NA	NA
Tiruchengode	4			4	1	107	108
Trichy	2	140	39	181	10	70	80
Tirupati		422	32	454		475	475
Tumkur	9	49	9	67		15	15
Vijayawada	1	193	101	295	6	23	29
Virudhunagar	12	211	27	250	NA	NA	NA
Vishakhapatnam	1	148	449	598	6	33	39
Grand Total	202	10638	2187	13027	682	3584	4266

Exams conducted in September-October 2016: Number of courses – 104

Cities	Sep-16				Oct-16		
	Offline	Online	Online prog	Total	Offline	Online	Total
Ahmedabad	2	135	11	148	11	170	181
Alappuzha	1	239		240	3	160	163
Allahabad		30	5	35	NA	NA	NA
Amaravathi	1	46	7	54	NA	NA	NA
Anand	1	157	26	184	NA	NA	NA
Aurangabad	1	121	1	123	NA	NA	NA
Bankura		88	4	92	NA	NA	NA
Barasat	22	98	4	124	NA	NA	NA
Bengaluru	11	516	26	553	13	450	463
Bhalki		41	8	49	NA	NA	NA
Bhilai	1	59	24	84	NA	NA	NA
Bhimavaram	5	165	52	222	NA	NA	NA
Bhopal		68	9	77	7	58	65
Bhubaneswar		45	2	47	7	92	99
Chennai	68	2907	809	3784	58	1762	1820

Coimbatore	34	933	68	1035	21	347	368
Dehradun	2	99		101		91	91
Delhi	7	435	24	466	23	612	635
Devrukh Ratnagiri	1	74	4	79		51	51
Dindigul		390	31	421	NA	NA	NA
Durg		130	30	160	NA	NA	NA
Durgapur		28	3	31	NA	NA	NA
Ernakulam	3	277	5	285	10	454	464
Erode	3	177	2	182	NA	NA	NA
Ghaziabad	2	115	17	134	NA	NA	NA
Gurgaon		23	1	24	NA	NA	NA
Guwahati		63	4	67	2	45	47
Haldia		102	7	109		66	66
Haldwani	1	15		16	NA	NA	NA
Howrah	23	46	18	87	NA	NA	NA
Hyderabad	23	405	17	445	8	356	364
Ichalkaranji	1	96	10	107	NA	NA	NA
Indore	1	72	5	78	NA	NA	NA
Jaipur	3	137	15	155	1	71	72
Kalyani	1	27	1	29		20	20
Kannur		35	4	39	NA	NA	NA
Kanpur	2	173	53	228	3	58	61
Kolkata	244	521	45	810	14	335	349
Kollam	2	341	6	349	NA	NA	NA
Kottayam	29	149	1	179	NA	NA	NA
Kovilpatti	1	505	18	524	8	180	188
Krishnagiri		197	23	220		61	61
Lucknow	2	154	6	162	3	111	114
Madanapaltee		816	2	818	NA	NA	NA
Madurai	2	325	73	400	21	135	156
Mangalore	2	66	2	70	2	74	76
Meerut	1	68	14	83	NA	NA	NA
Mohali	2	89	4	95	8	86	94
Mumbai	30	1141	37	1208	7	311	318
Mysuru		46	1	47	2	88	90
Nagercoil	1	348	18	367	1	62	63
Nagpur	12	49	3	64	7	47	54
Nanded		34	3	37	NA	NA	NA
Narasaraopet	1	31	22	54	NA	NA	NA
Noida	4	392	4	400	NA	NA	NA
Palakkad	1	145	3	149	10	115	125
Patna		23	2	25	3	31	34
Phagwara		46	3	49	NA	NA	NA
Pondicherry	1	833	46	880	2	182	184

Port Blair		10		10		3	3
Proddatur		258	2	260	7	61	68
Pune	16	1002	70	1088	12	238	250
Raipur	2	181	17	200		70	70
Ranchi	1	46	1	48	4	24	28
Salem		79	7	86	18	168	186
Salt Lake	251	447	27	725	NA	NA	NA
Shegaon		15	2	17	NA	NA	NA
Siliguri		16		16	NA	NA	NA
Sivakasi	25	741	47	813	43	264	307
Surampalem	1	214	59	274	NA	NA	NA
Surat	2	33		35	NA	NA	NA
Tadepalligudem	10	37	20	67	NA	NA	NA
Thanjavur		47	9	56	NA	NA	NA
Tiruchencode	2	339	114	455	NA	NA	NA
Trichy	10	446	102	558	7	191	198
Vijayawada	3	191	21	215	5	117	122
Virudhunagar	10	863	78	951	NA	NA	NA
Vishakhapatnam	1	150	62	213	3	76	79
Grand Total	889	20001	2281	23171	354	7893	8247

Exams conducted in March-April 2017: Number of courses – 130

Cities	Mar-17			Apr-17		
	Offline	Online	Total	Offline	Online	Total
Aasansol		43	43		69	69
Adisaptagram		36	36		62	62
Agra		57	57	NA	NA	NA
Ahmedabad	6	197	203	5	148	153
Allahabad		44	44	NA	NA	NA
Anand	1	189	190	4	181	185
Anantapur		54	54	NA	NA	NA
Aurangabad	3	215	218		228	228
Bankura		25	25		54	54
Barasat	3	143	146		131	131
Bardang		31	31		20	20
Belgaum	2	85	87	NA	NA	NA
Bengaluru	10	1190	1200	9	769	778
Bhimavaram	2	98	100	NA	NA	NA
Bhopal		97	97	1	85	86
Bhubaneswar	2	103	105	1	71	72
Chennai	45	3281	3326	37	2205	2242
Coimbatore	10	1337	1347	11	1346	1357
Dehradun	2	150	152	25	157	182

Delhi	17	778	795	9	859	868
Dindugul	2	76	78		93	93
Durg	14	431	445		418	418
Durgapur		79	79	2	82	84
Ernakulam	11	383	394	7	435	442
Erode	6	381	387		369	369
Ghaziabad	3	432	435	3	233	236
Guntur	3	414	417	4	256	260
Guwahati	1	81	82	2	49	51
Gwalior		28	28	NA	NA	NA
Haldia	1	102	103		68	68
Howrah		106	106	1	149	150
Hyderabad	10	735	745	5	321	326
Indore	1	115	116	1	70	71
Jaipur	3	163	166	1	157	158
Jammu		20	20		6	6
Kalyani		89	89		105	105
Kanpur	2	234	236	6	115	121
Kolkata	11	1141	1152	4	2562	2566
Kollam	8	331	339	6	600	606
Kottayam	2	155	157		201	201
Kovilpatti		236	236	1	360	361
Krishnagiri		77	77	NA	NA	NA
Lucknow		205	205	4	227	231
Madanapaltee		443	443	1	1120	1121
Madurai	6	532	538	1	709	710
Mangalore		126	126		115	115
Mohali	2	131	133	3	172	175
Mumbai	15	965	980	11	700	711
Mysuru		187	187		64	64
Nagercoil	3	100	103	2	73	75
Nagpur	3	89	92	1	93	94
Ongole		191	191		96	96
Palakkad	3	88	91	3	106	109
Patna	2	50	52	2	37	39
Phagwara	1	148	149	NA	NA	NA
Pondicherry	48	783	831	7	693	700
Proddatur		366	366		146	146
Pune	8	775	783	6	724	730
Raipur	2	110	112		111	111
Ranchi		48	48		36	36
Ratnagiri	2	72	74		52	52
Satara		59	59	1	119	120
Sivakasi	2	737	739		937	937
Solapur		194	194		738	738

Surampalem	1	153	154	5	107	112
Surat	1	77	78	NA	NA	NA
Tadepalligudem	NA	NA	NA		125	125
Trichy	3	334	337	2	650	652
Udupi	1	93	94	NA	NA	NA
Vijayawada	2	209	211	1	219	220
Virudhunagar	1	246	247	1	273	274
Vishakhapatnam	6	314	320	3	302	305
Grand Total	293	21787	22080	199	21778	21977

Annexure – 8: Compliance sheet/ Technical Bid

S. No.	Item	Yes/No	Support document (Yes/No)	Any deviations?
1.	Minimum 5 years of experience in conduct of online exams?			
2.	Minimum turn-over of Rs. 250 crores in the last 2 years?			
3.	Own the copyright of the source code being used for conducting the computer based online examinations?			
4.	The agency should be able to make changes as and when required in any of the components of the software			
5.	Duly signed copy of ISO 27001/27002 certificate?			
6.	CMMi Level 5 certification?			
7.	In-house quality assurance and product testing team?			
8.	Conduct performance exams to verify successful achievement of high concurrency, fast response time, and long-stress duration required of the system used to conduct the examination?			
9.	Support the entire solution (across India) on a 24 x 7 basis with a maximum response time of 3 hours?			

S.No.	Item	Yes/No or details as reqd	Deviations?
1.	All annexures as required furnished?		
2.	Vendor can conduct all 3 types of exams? 1. Computer based Programming testing capability complying with details in Annexure 9 2. Computer based Non-programming testing capability 3. Offline (paper/pen) testing capability		
3.	Say Yes/No to each of the types supported. If under development and not available immediately, mention timeline of availability. <ul style="list-style-type: none"> • Multiple choice questions • Multiple select questions • Option for negative marking • Fill in the blanks – <ul style="list-style-type: none"> • Numerical type - exact value or a range of values • Alphanumeric type - exact value or a set of values • Drag and Drop / match the following • Order the sequence of actions 		35

	<ul style="list-style-type: none"> • Identification of hot spots • Essay type questions 		
4.	Is the vendor willing to consider other formats as requested by the NPTEL office from time to time?		
5.	Rough sheets given to candidates are of 75 gsm or better – for all types of exams?		
6.	<p>Does the technical proposal have the following? Say Yes/No for each of the following.</p> <ul style="list-style-type: none"> • Question Paper Authoring Software • A bundling software or equivalent • Simple interface for to and fro interactions between the NPTEL main office and the SMEs • Method to encrypt the bundle of question papers and transfer to exam partner • Software to conduct as well as monitor the status during the exam across centres. • Software for post examination operations that includes: <ul style="list-style-type: none"> • a consolidated mark sheet of all candidates • detailed response sheet for every candidate • the audit logs of every candidate • analytics and basic statistics on the responses obtained 		
	<p>Please mention if the following have been included in the proposal.</p> <ul style="list-style-type: none"> • The number of nodes per city for conduct of exam • Number of cities from Annexure 7 that EP can conduct exams in • The projected capability of number of seats in each city by June 2017 • The availability of adequate number of technical personnel for each centre • Qualified Invigilators who are not currently studying in college • The process followed by the vendor for qualifying an exam center 		
	<p>Please confirm if the following details have been provided.</p> <ul style="list-style-type: none"> • Details of the exams conducted by the vendor in the past 12 months: • Total number of candidates appeared for each examination • Total number of candidates across all the cities in a single session • Maximum number of sessions that can be conducted if exam 		36

	<p>duration is 3hrs</p> <ul style="list-style-type: none"> • Number of days of examination conducted in the period Jan1-31Dec 2016 • Capability to conduct Multi session Flexible date exam- Exam will be available over a period specified by NPTEL, candidate can choose a center and session to take the exam. Give cost per candidate • Capability to conduct exams in locations outside India – Give list of locations and cost per candidate • Details of three largest exams, if any, committed Apr 2017 - Mar 2018. 		
	<p>Please say Yes/No</p> <ul style="list-style-type: none"> • The evaluation of the responses, if online, to be done within 3 days from date of exam and results shared with NPTEL office; • For offline exams, within 10 days the answer sheets need to be handed over to the NPTEL office. • Agreed to the penalty clauses listed 		
	<p>Dedicated Program Manager from EP to work with NPTEL</p>		
	<p>Tracking system with suitable mechanism for raising tickets and closure of outstanding issues along with the escalation matrix provided.</p>		
	<p>Exam processes</p> <ul style="list-style-type: none"> • There will be one TA for every 100 candidates and part thereof at an Exam Center. • 1 adequately trained Network Maintenance Engineer at each Center - per 200 candidates. • Center Head (CH) at each College or ITF. • There will one Admin person from the EP • One invigilator for every 30 candidates • Reserve pool to be at least 10% of total number of registered candidates • Adequate spacing (of at least 2 ft.) between two adjacent seats • Exam software with ability to magnify/zoom content on the screen. • Arrangements for Orthopedically handicapped candidates • Lighting, ventilation & comfortable temperature must be ensured within the exam hall. • The College or the ITF should also ensure the availability of a functional local area network and a power backup generator. All 		<p>37</p>

	<p>systems and network equipment at each Exam center should be provided with functional UPS. Uninterrupted power should be made available for the period of each session and for 30 minutes prior to and after each session on the day of examination.</p> <ul style="list-style-type: none"> • Clean and well maintained toilets, availability of a refreshment centre within the premises, a waiting room for accompanying people, adequate parking facility within the premises must be available. • Arrangements of static mock exams • Mock tests at the centre – day prior to exam • NPTEL will have the final say in re-allocation of candidates if the arrangement is found to be unsuitable during the mock test. 		
	<p>Candidate requirements during the exam:</p> <ul style="list-style-type: none"> • Display of instructions to candidates upon login • Concurrence of the candidate having read the instructions before start of examination. • Start and closure of the examination at scheduled time (candidates must not be able to start their examination even if they login before the scheduled time). • Display of remaining time available • Display of candidate details on the screen (including a photograph if available) during the examination. • Viewing the complete question paper or a section in the case of sectional papers. • Marking/unmarking a question (answered or unanswered) for review. • Display of status of questions • Switching between sections in the question paper (if applicable). • Provision of Data tables • Provision of online scientific calculators. • Exit from exam software will be only as per the settings given by NPTEL. Candidates cannot exit at any time before the duration given by NPTEL. 		
	Zero Loss of Data as entered by the candidate		
	Generation of Event based Log (Audit Trail) which captures each and		38

	every click of the candidate		
	Computers administering the examinations should not be able to connect or access any other machine or network other than the one on which the examination is being conducted.		
	The server shall have the capability to start, control, and monitor the examination for all candidates.		
	After the examination, data will be uploaded to a server at the Master Control Facility and external hard disk/usb storage.		
	There will be one or more Master Control Facilities accessible for monitoring by NPTEL.		

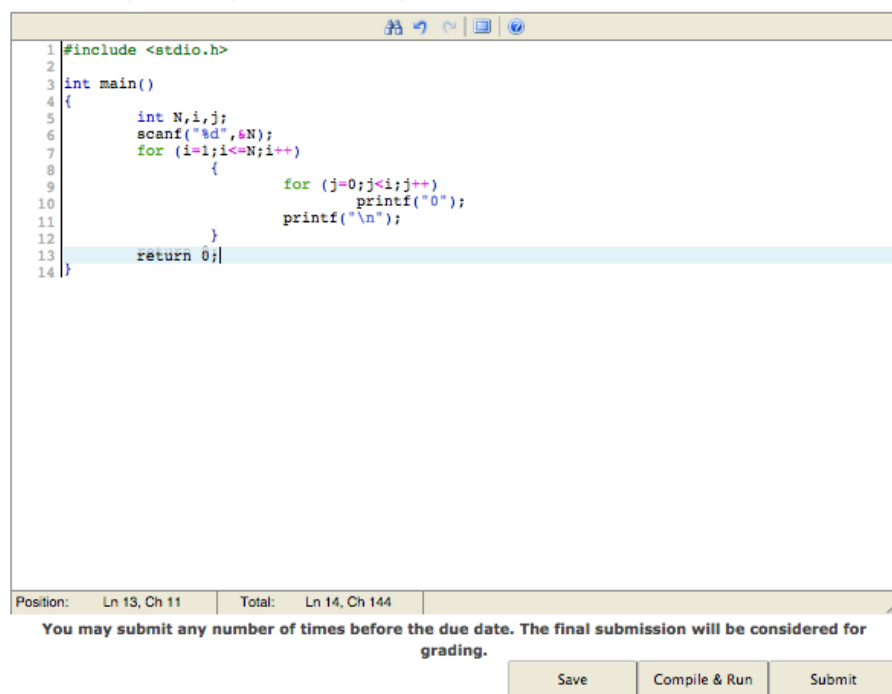
Annexure – 9: Specification of Online Programming Questions

The exam software of the EP should have capability to support C and C++ programming questions. Debugger should be accessible from candidate console during exam.

For programming courses, the questions in the certification exam will be programming questions. Typically, four programming problems will be given with public and private test cases. The methodology of these questions is similar to that of online automatic judging of programming competitions using spoj (<http://www.spoj.com/>) or mooshak (<https://mooshak.dcc.fc.up.pt/>). We explain the required features of the programming questions and show here screenshots from our online portal (<https://onlinecourses.nptel.ac.in>) to clearly convey the required features.

Question page

You are given a positive integer N. You have to print N rows as follows. The first row consists of one 0, the second row 2 zeroes, and so on, until the Nth row, which consists of N zeroes.



The screenshot shows an online programming question page. At the top, there is a code editor window with the following C code:

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int N,i,j;
6     scanf("%d",&N);
7     for (i=1;i<=N;i++)
8     {
9         for (j=0;j<i;j++)
10            printf("0");
11    }
12    return 0;
13 }
```

Below the code editor, there is a status bar showing "Position: Ln 13, Ch 11" and "Total: Ln 14, Ch 144". Below the status bar, there is a message: "You may submit any number of times before the due date. The final submission will be considered for grading." Below the message, there are three buttons: "Save", "Compile & Run", and "Submit".

Sample Test Cases	Input	Output
Test Case 1	2	0 00
Test Case 2	6	0 00 000 0000 00000 000000

1. The question text comes on top.
2. Next is the editor window, where the candidate enters the code.
3. Below the editor, there are buttons for save, compile&run, submit.
4. At the bottom, public test cases with input and correct output are shown.
5. When the candidate presses "Save", the code in the editor needs to be saved with a filename that indicates the candidate registration number, problem id and timestamp.

Compile & Run

Successful compile and run

You are given a positive integer N. You have to print N rows as follows. The first row consists of one 0, the second row 2 zeroes, and so on, until the Nth row, which consists of N zeroes.

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int N,i,j;
6     scanf("%d",&N);
7     for (i=1;i<=N;i++)
8     {
9         for (j=0;j<i;j++)
10            printf("0");
11        printf("\n");
12    }
13    return 0;
14 }
```

Position: Ln 1, Ch 1 Total: Ln 14, Ch 144

You may submit any number of times before the due date. The final submission will be considered for grading.

Save

Compile & Run

Submit

Compilation : **Passed**

Tests : 2 / 2 Passed

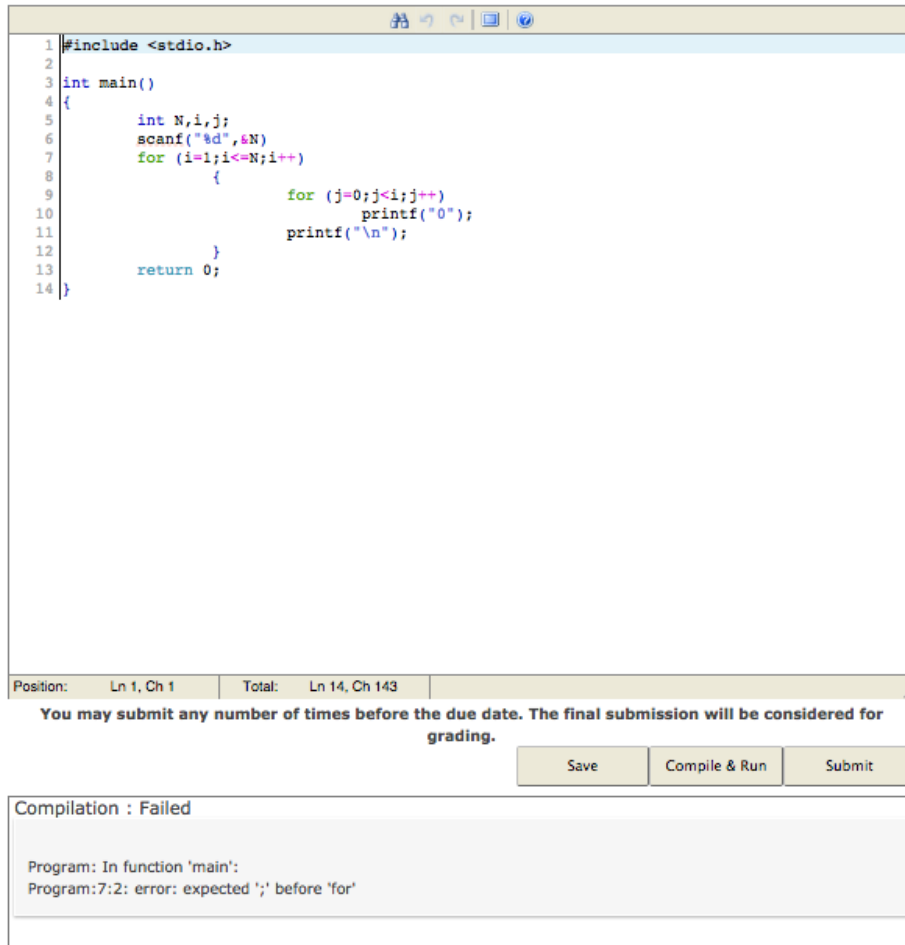
Test Case 1 **Passed**

Test Case 2 **Passed**

1. When "Compile & Run" button is pressed, the code is compiled and run with the inputs from the public test cases.
2. The result of compilation is shown first.
3. The output from the code is compared with the expected output.
4. If the output from the code is correct, "Passed" is printed for the corresponding test case.
5. The number of test cases passed is also shown on the top.
6. The code that is compiled needs to be saved with the same filename convention as mentioned earlier.

Compilation error

You are given a positive integer N. You have to print N rows as follows. The first row consists of one 0, the second row 2 zeroes, and so on, until the Nth row, which consists of N zeroes.



```
1 #include <stdio.h>
2
3 int main()
4 {
5     int N,i,j;
6     scanf("%d",&N)
7     for (i=1;i<=N;i++)
8     {
9         for (j=0;j<i;j++)
10            printf("0");
11        printf("\n");
12    }
13    return 0;
14 }
```

Position: Ln 1, Ch 1 | Total: Ln 14, Ch 143

You may submit any number of times before the due date. The final submission will be considered for grading.

Save | Compile & Run | Submit

Compilation : Failed

Program: In function 'main':
Program:7:2: error: expected ';' before 'for'

1. If compilation failed, the error message should be printed as above.

Runtime error

You are given a positive integer N. You have to print N rows as follows. The first row consists of one 0, the second row 2 zeroes, and so on, until the Nth row, which consists of N zeroes.

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int N,i,j;
6     scanf("%d",&N);
7     for (i=1;i<=N;i++)
8     {
9         for (j=0;j<i;j++)
10            printf("%d",1/j);
11        printf("\n");
12    }
13    return 0;
14 }
```

Position: Ln 1, Ch 1 | Total: Ln 14, Ch 149

You may submit any number of times before the due date. The final submission will be considered for grading.

Save | Compile & Run | Submit

Compilation : **Passed**
Tests : 0 / 2 Passed

Test Case 1 **Runtime Error**

Input	Expected Output	Actual Output
2	0\n 00\n	

1. If a test case caused a runtime error, that should be indicated as above.

Incorrect output

You are given a positive integer N. You have to print N rows as follows. The first row consists of one 0, the second row 2 zeroes, and so on, until the Nth row, which consists of N zeroes.

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int N,i,j;
6     scanf("%d",&N);
7     for (i=0;i<N;i++)
8     {
9         for (j=0;j<i;j++)
10            printf("0");
11        printf("\n");
12    }
13    return 0;
14 }
```

Position: Ln 1, Ch 1 Total: Ln 14, Ch 143

You may submit any number of times before the due date. The final submission will be considered for grading.

Save Compile & Run Submit

Compilation : Passed
Tests : 0 / 2 Passed

Test Case 1 **Wrong Answer**

Input	Expected Output	Actual Output
2	0\n00\n	\n0\n

1. If compile & run was successful, but the answer is wrong for some test case, this should be indicated as above.
2. The expected output and the actual output must be shown on the screen as above.

Submission page

Correct submission

You are given a positive integer N. You have to print N rows as follows. The first row consists of one 0, the second row 2 zeroes, and so on, until the Nth row, which consists of N zeroes.

```
1 #include <stdio.h>
2
3 int main()
4 {
5     int N,i,j;
6     scanf("%d",&N);
7     for (i=1;i<=N;i++)
8     {
9         for (j=0;j<i;j++)
10            printf("0");
11        printf("\n");
12    }
13    return 0;
14 }
```

Position: Ln 1, Ch 1 Total: Ln 14, Ch 144

You may submit any number of times before the due date. The final submission will be considered for grading.

Save

Compile & Run

Submit

You scored 100.0/100

1. When the candidate presses "Submit", the code is compiled and run with private test cases as input.
2. The private test cases are not to be shown to the candidate. These are used only for the final evaluation.
3. The score displayed should show the percentage of private test cases passed.
4. If all test cases passed, the score is 100/100. If 3 out of 4 private test cases passed, the score is 75/100 and so on.
5. All submitted code must be saved with the filename convention mentioned earlier.

Important points to be considered

1. All compilation and/or runtime scenarios must be gracefully handled and should not result in any errors from the server.
2. Memory problems and infinite loops must be handled gracefully.
3. The compiler to be used will be an open source (mostly GNU) compiler for the language. The NPTEL office or course instructor will give the exact version.
4. An open source syntax-highlighting editor is to be used in the browser.
5. The compilation server needed for programming questions needs to be suitably configured to ensure a quick response time to candidates during the exam.
6. The connections needed from the candidate machines to the servers or between servers must be robust and suitably configured.

Integrated Development Environment (IDE) on candidate machines

1. As a failsafe option, an IDE for edit/compile/run is to be installed on all candidate machines. The NPTEL office or course instructor will provide all necessary installation files for the IDE.
2. The installation and testing of the IDE on each candidate machine is the full responsibility of the exam partner.
3. The candidate is to save one final submission file on a local folder with the following file naming convention: A.c, B.c, C.c, D.cpp for Problems A, B, C, D etc.
4. This local folder will be named with the registration number of the candidate.
5. At the end of the exam, all local folders should be handed over on a pen drive to the NPTEL office.

**ANNEXURE 10
COMMERCIAL /PRICE BID**

To be submitted ONLY IN THE COMMERCIAL BID

Assume a minimum of 50 candidates at a center per session. Assume 10% candidates are for Online Programming Exam, 80% for Online Non Programming Exam, and 10% for Offline Exam – use these for calculating the weighted average cost per candidate.

S.No	Item	Cost Per Candidate
1	Online Programming Exam	
2	Online Non Programming Exam	
3	Offline Exam	
	Weighted Average cost per candidate	

(Signature of the bidder)