



राष्ट्रीय प्रौद्योगिकी संस्थान दिल्ली

NATIONAL INSTITUTE OF TECHNOLOGY DELHI
(शिक्षा मंत्रालय, भारत सरकार के अधीन एक स्वायत्त संस्थान)

(An autonomous Institute under the aegis of Ministry of Education (Shiksha Mantralaya), Govt. of India)
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EXAMINATION-PAPER- I
Date: 07.06.2023 (Wednesday)

QUESTION PAPER FOR THE POST OF EXECUTIVE ENGINEER
(PAY LEVEL-10)

Maximum Marks: 80

Time: 02 Hours 30 minutes

Name of Candidate: _____ Roll No: _____

INSTRUCTIONS TO CANDIDATES

1. The test booklet contains two Sections i.e. Section A and B. Section A contains 40 multiple choice questions (MCQs) (Civil discipline, contract management etc. 40 questions) and Section B (Core Engineering Subjective questions). Each Question in Section-A with one correct answer, carrying ONE mark (**negative 0.25 marks for each wrong answer**) (Total=40 Questions, 40 Marks; Time = 60 Minutes). Choose the correct answer (one only) for each question and write the answer in the space provided against each question. Section B contains Subjective Questions of Civil Discipline of 40 Marks (Total 7 Questions, Time: 90 Minutes) for which separate answer sheet is enclosed. Marks distribution of questions has been indicated against each.
2. Write your Name, Roll No. and sign on each page of this booklet.
3. The candidate should check that the booklet does not have any unprinted or torn or missing pages or questions etc. If so, get it replaced with another question paper, before question paper starts.
4. Return the Question Paper cum Answer Sheet to the invigilator after the examination is over.
5. **Mobile, Electronic Watch** and other **Electronic Gadgets** are prohibited in the examination.
6. There should not be any cutting or overwriting in the Answer.
7. Use of Unfair Means in Examination will lead to cancellation of candidature.
8. Please write your Answer with Blue Pen only. Use of Black Pen/ Pencil is not allowed.

Signature of the candidate

Signature of the Invigilator

FOR OFFICE USE

Roll No.	Paper	Marks Obtained
	Section A: 40 marks	
	Section B: 40 marks	

Signature of the Evaluator

GENERAL- SECTION-A

Q. No.	QUESTION	Answer
1.	In case of a simply supported beam with central load W, the beam is considered as safe in deflection, if the ratio of its span/depth is less than ____. (A) 100 (B) 50 (C) 24 ✓ (D) 10	(C)
2.	A soil sample has a porosity of 40 percent. The specific gravity of solids is 2.70. What is the dry density of the soil? (A) 0.667 (B) 0.124 (C) 0.162 ✓ (D) 0.82	(C)
3.	When two bars are used as bundled bars the development length of each bar shall be that of the individual bar increased by ____. (A) 5% (B) 10% ✓ (C) 12% (D) 0%	(B)
4.	For a propped cantilever of length L subjected to a point load at Centre, and plastic moment Mp, the value of the Collapse load is _____. (A) 8 Mp/L (B) 12 Mp/L (C) 6 Mp/L ✓ (D) 4 Mp/L	(C)
5.	The loss of pre stress in the tendons due to creep in concrete is approximately _____. (A) 10% (B) 5% to 8% ✓ (C) Less than 5% (D) 15% to 20%	(B)
6.	The ultimate moment of resistance of a singly reinforced concrete section is _____. (A) Depending on the quality of steel and not concrete (B) Depending on the quality of concrete not steel ✓ (C) Depending on the qualities of concrete and steel (D) Independent of the qualities of concrete and steel	(B)
7.	Pressure at the hydrants shall not exceed- (A) 7 kgf/cm ² ✓ (B) 8 kgf/cm ² (C) 9 kgf/cm ² (D) 10 kgf/cm ²	(A)
8.	What is the minimum height of the building above which passenger lifts must be provided (A) 10.5 mtr (B) 12.5 mtr ✓ (C) 14.5 mtr (D) 16.5 mtr	(B)
9.	As per NBC 2016, what is the fire rating of door openings in basements- (A) 60 mins (B) 90 mins (C) 120 mins ✓ (D) 180 mins	(C)
10.	Economic life of RCC framed structures is taken as- (A) 30 years (B) 55 years (C) 75 years ✓ (D) 100 years	(C)
11.	Advance given for capital intensive work to commence the work is called- (A) Advance for Plant & Machinery (B) Secured Advance (C) Mobilization Advance ✓ (D) Advance Payment	(C)

12.	Provision for contingencies as per CPWD works Manual for estimated cost upto 1 Crore is— (A) 3% (B) 4% (C) 5% ✓ (D) 7.5%	(C)
13.	Which of the following is not an accepted mode of Earnest Money Deposit- (A) Treasury challan (B) A/c Payee cheque ✓ (C) Demand Draft (D) Fixed Deposit Receipt	(B)
14.	An architectural plan is conventionally cut at the _____. (A) Roof level (B) Floor level (C) Plinth level (D) Window sill level ✓	(D)
15.	_____ of the building is the useful area or liveable area or retable area. This is the total floor area minus the circulation area, verandas, corridors, passages, staircase, lifts, entrance hall, etc. minus other non-useable areas. (A) Plinth area (B) Floor area (C) Carpet area ✓ (D) Circulation area	(C)
16.	The plinth or any part of a building or outhouse shall be so located with respect to the surrounding ground level that adequate drainage of the site is assured. The height of the plinth shall be not less than _____ from the surrounding ground level. (A) 300 mm (B) 450 mm ✓ (C) 600 mm (D) 750 mm	(B)
17.	In case of educational building minimum clear width of stair case as per NBC 2016 required is _____. (A) 1.00 m (B) 1.25 m ✓ (C) 1.50 m (D) 2.00 m	(C)
18.	The time by which the completion of activity can be delayed without affecting the start of Succeeding activity is called (A) Total float (B) Interfering float (C) Independent float (D) Free float ✓	(D)
19.	In case, the work cannot be started due to reasons not within the control of the contract or within 1/8 of the stipulated time for completion of work or one month whichever is higher, either party make close the contract by giving notice to the other party. In such case the performance guarantee of the contractor for work upto 1 Crore rupees shall be refunded within- (A) 7 days (B) 15 days ✓ (C) 21 days (D) 30 days	(B)
20.	In a QCBS (Quality and cost-based system), what is the highest weightage allowed for technical parameter- (A) 50% (B) 60% (C) 70% (D) 80% ✓	(D)
21.	For projects upto Rs. 100 crores, powers are vested with the Administrative Ministry/Department to accept a variation in the approved estimate within- (A) 10% ✓ (B) 20% (C) 30% (D) 40%	(A)
22.	e-Procurement according to GFR means- (A) Procurement of computer related goods (B) Use of information and communication technology in the procurement process ✓ (C) Payment for procurement being made online (D) Procurement only through foreign sources	(B)

23.	The Contract Labour Regulation and Abolition Act pertains to- (A) 1956 (B) 1970 (C) 2000 (D) 2016	(B)
24.	PFMS issued for- (A) Bill processing and receipt management (B) Financial reporting (C) Fund flow management (D) All the above	(A)
25.	No claim for payment from the contractor should be entertained after a lapse ofof arising of the claim- (A) 2 years (B) 5 years (C) 10 years (D) 3 years	(D)
26.	Which clause of CPWD general condition of contract deals with Arbitration- (A) CL2 (B) CL3 (C) CL5 (D) CL25	(D)
27.	TPQA (For new construction) as per CPWD norms has to be conducted by external TPQA agency for project costing (A) Below 05 Cr (B) Below 10 Cr (C) Above 20 Cr (D) None of the above	(C)
28.	EPC mode of construction stands for- (A) Energy powered and construction (B) Engineering powered and construction (C) Engineering procurement and construction (D) Engineering procurement and contract	(C)
29.	Information in form of returns are send to CTE's Organization for Civil works contract having threshold limits as (A) Up to 10 Lakhs (B) More than 2 Crore (C) More than 5 Crore (D) More than 10 Crore	(C)
30.	As per GRIHA norms:- (A) Recycled material cannot be used (B) Recycled material can be used (C) Both A and B (D) None of the Above	(B)
31.	As per NGT norms, BOD of treated sewage water shall be - (A) Less than 30 ppm (B) Less than 20 ppm (C) Less than 10 ppm (D) Less than 05 ppm	(C)
32.	Table tops as per IRC are constructed on road for- (A) Pedestrian crossing (B) Fixing of traffic signals (C) To slow the speed of vehicles (D) For parking of vehicles	(C)

33.	IS 1893-2016 deals with: (A) Pre tensioned building (C) Seismic design of Buildings	(B) Masonry structure (D) Design of Roads	(C)
34.	Geo synthetics materials are used to - (A) Improve soil condition (B) Drainage control (C) Enforcement (D) All the above		(D)
35.	The words "remodeling" or "replacement" fits under which category of work according to the provisions of General Financial Rules? (A) Repair work (B) Minor work (C) Original work (D) Maintenance		(C)
36.	Any development in a project in the midst of its progress should be covered by (A) Supplementary estimate (B) A fresh work order (C) An open tender (D) None of the above		(A)
37.	Identify the document that does not form part of a Request for Proposal (RFP)- (A) A letter of Invitation (C) Bid evaluation criteria	(B) Terms of Reference (D) Proposed list of potential consultants	(D)
38.	Arrange the following steps in the order of disposal through advertised tender- (I) Preparation of bidding documents (II) Selection of highest bidder (III) Return of bid security to unsuccessful bidders (IV) Opening of bids (A) (I), (II), (III), (IV) (B) (I), (IV), (II), (III) (C) (I), (III), (II), (IV) (D) (IV), (I), (II), (III)		(B)
39.	HEFA stands for (A) Higher Education Foreign Agency (B) Higher Education Financing Agency (C) High Efficient Financing Agency (D) Higher Education Financial Account		(B)
40.	The covered area of new Parliament building is (A) 50,000 Sqm (B) 55,000 Sqm (C) 64,500 Sqm (D) 70,000 Sqm		(C)