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**NATIONAL INSTITUTE OF TECHNOLOGY, GOA**

**Recruitment for the Post of Junior Engineer (Civil)**

*Total Time Allowed: 1 hour 30 minutes*

*Total Marks: 45*

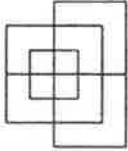
**IMPORTANT INSTRUCTIONS**

1. The candidate will be supplied with the Question Booklet and OMR Answer Sheet 05 minutes prior to the commencement of the Examination.
2. The Level I Written Examination has the following two parts:
  - Level I, Part A (General) consist of 15 questions for a total of 15 marks, with 1 mark awarded for each correct answer and a negative marking of 0.25 for every wrong answer.
  - Level I, Part B (Domain Specific) consist of 30 questions for a total of 30 marks, with 1 mark awarded for each correct answer and a negative marking of 0.25 for every wrong answer.
3. The candidates have to mark their answer by completely darkening the appropriate circle on the OMR Answer sheet. Incomplete or improper marking may lead to non-evaluation.
4. The candidate may use strictly Black/Blue Ball Pen to darken the circle completely.
5. Question Paper, OMR sheet and rough sheet will have to be returned to the Invigilator after the end of the exam.
6. No candidates will be allowed to leave the Exam Hall before the scheduled completion time.
7. Before attempting to answer, candidates are requested to check whether all the questions are there and ensure there are no blank pages in the Question Booklet.
8. The candidate must write their Application ID in the space provided and sign on question booklet and OMR sheet. Do not write anything else on the Question Booklet.
9. Each question comprises four responses (A), (B), (C) and (D). Candidates have to select **ONLY ONE** correct response.
10. If more than one option is marked for one question, the answer will be treated as wrong. e.g. If for any item, **B** is the correct answer, the candidate has to darken only the **B circle on OMR sheet** against the question.
11. Candidates should not remove or tear off any sheet from this Question Booklet. Candidates are not allowed to take the Question Booklet out of the Examination Hall.
12. Failure to comply with any of the above instructions will render the candidate liable to such action or penalty as may be decided by the Competent Authority, NIT Goa.

*Invigilator's Signature*

*Candidate's Signature*

## Part A (General)

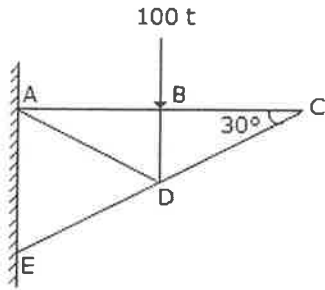
1. NIT Goa was established in  
(A) 2011 (B) 2012  
(C) 2009 (D) 2010
2. Fill in the blank in the comparison- Lake : River :: Still : \_\_\_\_\_  
(A) Fly (B) Flow  
(C) Fall (D) Rise
3. Find the missing number in the series : 35, 29, 24, 20, \_\_\_\_.  
(A) 17 (B) 16  
(C) 18 (D) 15
4. Find the minimum number of straight lines to make the following figure.  
  
(A) 15 (B) 13  
(C) 18 (D) 21
5. If X percent of Y is Z, Y percent of X would be  
(A) Z (B)  $1/Z$   
(C) Infinite (D) 1
6. How many nouns are there in the sentence: "The students were rewarded for their performance".  
(A) 3 (B) 2  
(C) 1 (D) 4
7. What is a synonym for the word: "Success".  
(A) Luck (B) Result  
(C) Hard work (D) Feat
8. Fill in the blank- The site engineer \_\_\_\_\_ errors on the drawing.  
(A) checked (B) marked  
(C) erased (D) read
9. Improve the sentence- The officer asked the staff to inform upon the matter.  
(A) The officer asked the staff to report on the matter.  
(B) The officer requested the staff to discuss on the matter.  
(C) The staff was requested by the officer about the matter.  
(D) The officer informed the staff to comply on the matter.
10. Fill in the blanks: Goa was, for long, \_\_\_\_\_ by Portuguese.  
(A) bought (B) traded  
(C) ruled (D) owned
11. Complete the sentence: Despite his best attempts to hide his errors .....  
(A) we could detect his mistakes.  
(B) we failed to detect his mistakes.  
(C) he succeeded to hide the mistakes.  
(D) he failed to show his mistakes.

12. Goa was liberated in  
 (A) 1947 (B) 1961  
 (C) 1959 (D) 1962
13. Inflation is characterized by  
 (A) Rise in prices (B) Shortage of money at buyer's end  
 (C) Fall in supply (D) Rise in demand
14. One of the key taxes replaced by GST is  
 (A) Income tax (B) Sales tax  
 (C) Professional tax (D) Vehicle Registration tax
15. Full form of AQI in Environment science is  
 (A) Air Quality Integer (B) Atmospheric Quality Index  
 (C) Aero-particle Quantity Integer (D) Air Quality Index

### Part B (Civil Engineering)

16. The nominal size of a modular bricks in mm is  
 (A) 230 x 115 x 115 (B) 225 x 115 x 115  
 (C) 200 x 100 x 100 (D) 225 x 110 x 110
17. A 1st class brick has a minimum compressive strength of  
 (A) 15 N/mm<sup>2</sup> (B) 12.5 N/mm<sup>2</sup>  
 (C) 11.5 N/mm<sup>2</sup> (D) 10.5 N/mm<sup>2</sup>
18. In brick masonry, following face of external wall is kept in plumb  
 (A) External (B) Internal  
 (C) Either (D) Neither
19. Slump test measures  
 (A) Workability of mortar (B) Workability of concrete  
 (C) Initial setting time of cement (D) Initial setting time of mortar
20. Fineness of cement is measured in  
 (A) N/gm (B) mm<sup>2</sup>/N  
 (C) cm<sup>2</sup>/gm (D) parts per million (ppm)
21. Full form of AAC blocks is  
 (A) Aerated Atactic Concrete blocks (B) Automatic Aerated Concrete blocks  
 (C) Atactic Autoclave Concrete blocks (D) Autoclave Aerated Concrete blocks
22. Fill in the blank in "Fly ash brick is \_\_\_\_\_ than red clay bricks"  
 (A) Heavier and weaker (B) Lighter and stronger  
 (C) Lighter and weaker (D) Heavier and stronger

23. In the following cantilever truss, force in members in BC and DC are



- (A) Zero in each. (B) 26 t in BC and 37 t in DC.  
 (C) 13 t in BC and 26 t in DC. (D) 13 t in BC and 37 t in DC.
24. In the previous figure, force in member in BD is:  
 (A) 33 t (B) 50 t  
 (C) 67 t (D) 100 t
25. The point of contraflexure is the point where:  
 (A) shear force changes its sign. (B) bending moment changes its sign.  
 (C) shear force is zero. (D) bending moment is minimum.
26. What is the minimum diameter for sewers:  
 (A) 75 mm (B) 150 mm  
 (C) 200 mm (D) 250 mm
27. Plinth area of a building is:  
 (A) Total covered area of all the floors.  
 (B) Total carpet area of all the floors, with semi covered carpet area duly factored.  
 (C) Total covered area at the plinth.  
 (D) Total covered area of all the floors, with semi covered area duly factored.
28. Mass, force and distance in SI units, respectively are represented by  
 (A) Pound, Ounce, ft (B) N, Kg, m  
 (C) Ounce, Pound, ft (D) Kg, N, m
29. Gypsum is added in cement to control:  
 (A) Strength (B) Setting time  
 (C) Workability (D) Durability
30. The final setting time of an ordinary cement is:  
 (A) 24 hrs (B) 10 hrs  
 (C) 28 days (D) 30 minutes
31. FAR (Floor Area Ratio) or FSI (Floor Space Index) is:  
 (A) Plot area/ Total covered area (B) Total covered area/ plot area  
 (C) Plot area/ Total plinth area (D) Total plinth area/ plot area
32. The curvature of the earth's surface, is considered only if the extent of survey is more than  
 (A) 100 sq km (B) 160 sq km  
 (C) 200 sq km (D) 250 sq km
33. The fundamental principle of surveying is to work  
 (A) from part to the whole (B) from whole to the part  
 (C) from higher level to the lower level (D) from lower level to higher level.

34. Direct method of contouring is:
- (A) Less accurate (B) More accurate but slow  
(C) Fast and inaccurate (D) Not used
35. The intercept of a staff
- (A) is maximum if the staff is held truly normal to the line of sight.  
(B) is minimum if the staff is held truly normal to the line of sight.  
(C) decreases if the staff is tilted away from normal.  
(D) increases if the staff is tilted towards normal.
36. Design loads are governed by following set of code:
- (A) IS: 456 (B) IS: 457  
(C) IS: 800 (D) IS: 875
37. GIS stands for:
- (A) Global Information System (B) Geographic Information System  
(C) Ground Index System (D) Graphical Input System
38. Void ratio is defined as:
- (A) Volume of voids/Total volume (B) Volume of solids/Volume of voids  
(C) Volume of voids/Volume of solids (D) Volume of water/Volume of solids
39. A truss is a structure designed in such a way that its members carry:
- (A) Bending stress (B) Shear and bending stress  
(C) Longitudinal axial stress (D) Bending, shear and torsional stress
40. Aerobic bacteria:
- (A) Flourish in the presence of free oxygen (B) Consume organic matter as their food  
(C) Oxidize organic matter in sewage (D) All the above
41. Which of the following is an activity?
- (A) Excavation of foundation (B) Curing  
(C) Writing answer sheet (D) All of the above
42. Compaction is:
- (A) Removal of air (B) Removal of water  
(C) Removal of solids (D) Increase in voids
43. Higher N-value in an SPT indicates:
- (A) Softer soil (B) Dry soil  
(C) Denser soil (D) Wet soil
44. What property of soil allows it to be deformed rapidly without rupture?
- (A) Plasticity (B) Tenacity  
(C) Elasticity (D) Liquidity
45. Critical Path Net Work helps an engineer
- (A) To concentrate his attention on critical activities.  
(B) To divert the resources from non-critical advanced activities to critical activities.  
(C) To be cautious for avoiding any delay in the critical activities to avoid delay of the whole project.  
(D) All the above.

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**End of Question paper**

## ANSWER KEY

**FOR THE WRITTEN TEST CONDUCTED FOR THE POST OF  
JUNIOR ENGINEER (CIVIL) AT NIT GOA ADVERTISED AGAINST THE  
ADVERTISEMENT NO NITGOA/RECT/2025/7 DATED 28032025**

<b>Q. No.</b>	<b>Answer Key</b>	<b>Q. No.</b>	<b>Answer Key</b>	<b>Q. No.</b>	<b>Answer Key</b>
1.	D	16.	C	31.	D
2.	B	17.	D	32.	D
3.	A	18.	A	33.	B
4.	B	19.	B	34.	B
5.	A	20.	C	35.	B
6.	B	21.	D	36.	D
7.	D	22.	B	37.	B
8.	B	23.	A	38.	C
9.	A	24.	D	39.	C
10.	C	25.	B	40.	D
11.	A	26.	B	41.	D
12.	B	27.	D	42.	A
13.	A	28.	D	43.	C
14.	B	29.	B	44.	A
15.	C	30.	B	45.	D