

# INDIAN INSTITUTE OF TECHNOLOGY, JODHPUR

## TEST PAPER FOR THE POST OF JUNIOR ENGINEER (Civil)

Advt. 21

Duration: 90 min.  
Maximum marks: 100

Name: \_\_\_\_\_

Address: \_\_\_\_\_

### Note:

1. Each question of section A is of 2 marks and of section B is 3 marks
  2. No negative marking
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### Section A

Tick the correct answer

1. Workability of concrete is directly proportional to
  - a) Aggregate cement ratio
  - b) Time of transit
  - c) Grading of the aggregate
  - d) All of above
2. Bulking of sand is maximum if moisture contents is about
  - a) 2 %
  - b) 4 %
  - c) 6 %
  - d) 10 %
3. For walls, columns and vertical faces of all structural members, the form work is generally removed after
  - a) 24 to 48 hours
  - b) 3 days
  - c) 7 days
  - d) 14 days

4. Which of the following ingredients of the brick earth enables the brick to retain its shape?
- a) Alumina
  - b) Silica
  - c) Iron
  - d) Magnesia
5. Glazing is used to make earthenware
- a) Hard
  - b) Soft
  - c) Porous
  - d) Impervious
6. The basic purpose of a retarder in concrete is
- a) To increase the initial setting time of cement paste in concrete
  - b) To decrease the initial setting time of cement paste in concrete
  - c) To render the concrete more water tight
  - d) To improve the workability of concrete mix
7. Sum of tread and rise must lie between
- a) 300 to 350 mm
  - b) 400 to 450 mm
  - c) 500 to 550 mm
  - d) 600 to 650 mm
8. The correction for sag is
- a) Always additive
  - b) Always subtractive
  - c) Always zero
  - d) Sometimes additive and sometimes subtractive
9. Admixtures which cause early setting, and hardening of concrete are called
- a) Workability admixtures
  - b) Accelerators
  - c) Retarders
  - d) Air entraining agents

10. A 100 m tape is held 1 m out of line. The true length is

- a) 100.0050 m
- b) 99.9950 m
- c) 100.0100 m
- d) 99.9800 m

11. If the coordinates of A are 100 N 200 E and those of C are 100 S and 200 E, then the length AC is

- a) 400.00
- b) 282.84
- c) 244.94
- d) 200.00

12. Camber in the road is provided for

- a) Effective drainage
- b) Counteracting the centrifugal force
- c) Having proper sight distance
- d) None of the above

13. Alkalinity in water is expressed as milligrams per litre in terms in terms of equivalent

- a) Calcium carbonate
- b) Magnesium carbonate
- c) Sodium carbonate
- d) Calcium hydroxide

14. The percentage of chlorine in fresh bleaching powder is about

- a) 10 to 15
- b) 20 to 25
- c) 30 to 35
- d) 40 to 50

15. Activated carbon is used for

- a) Disinfection
- b) Removing hardness
- c) Removing odours
- d) Removing corrosiveness

16. Which of the following unit works in anaerobic conditions?
- a) Sludge digestion tank
  - b) Sedimentation tank
  - c) Activated sludge treatment
  - d) Trickling filters
17. The reduction in project time normally results in
- a) Decreasing the direct cost and increasing indirect cost
  - b) Increasing the direct cost and decreasing the indirect cost
  - c) Increasing the direct cost and indirect cost both
  - d) Decreasing the direct cost and indirect cost both
18. Which of the following values of pH represents a stronger acid?
- a) 2
  - b) 5
  - c) 7
  - d) 10
19. The ratio of volume of voids to the total volume of soil mass is called
- a) Air content
  - b) Porosity
  - c) Percentage air voids
  - d) Voids ratio
20. The maximum bending moment due to a moving load on a fixed ended beam occurs
- a) At a support
  - b) Always at the midspan
  - c) Under the load only
  - d) None of the above
21. Bitumen of grade 80/100 means
- a) Its penetration value is 8 mm
  - b) Its penetration value is 10 mm
  - c) Its penetration value is 8 to 10 mm
  - d) Its penetration value is 8 to 10 cm

22. If the length of a simply supported beam carrying a concentrated load at the centre is doubled, the deflection at the centre will become
- a) Two times
  - b) Four times
  - c) Eight times
  - d) Sixteen times
23. Which of the following soils has more plasticity index?
- a) Sand
  - b) Silt
  - c) Clay
  - d) Gravel
24. The heaviest I-section for same depth is
- a) ISMB
  - b) ISLB
  - c) ISHB
  - d) ISWB
25. The slenderness ratio of a column supported throughout its length by a masonry wall is
- a) Zero
  - b) 10
  - c) 100
  - d) Infinity
26. Coarse grained soil are best compacted by a
- a) Drum roller
  - b) Rubber tyred rolled
  - c) Sheep's foot roller
  - d) Vibratory roller
27. In case of hand mixing of concrete, the extra cement to be added is
- a) 5 %
  - b) 10 %
  - c) 15 %
  - d) 20 %

28. Which software is not a file compression utility?

- a) 7-zip
- b) Win Rar
- c) Win Zip
- d) Compress

29. The process of removing unwanted part of an image is called

- a) Hiding
- b) Bordering
- c) Cropping
- d) Cutting

30. To apply center alignment to a paragraph we can press

- a) Ctrl + S
- b) Ctrl + C
- c) Ctrl + C + A
- d) Ctrl + E

31. Which one is not an Image file?

- a) .bmp
- b) .png
- c) .wmv
- d) .jpg

32. How many sheets are there, by default, when we create a new Excel file?

- a) 1
- b) 3
- c) 2
- d) 5

33. Verification of a login name and password is known as

- a) Configuration
- b) Accessibility
- c) Authentication
- d) Logging in

34. A number of letter that appears little above the normal text is called

- a) Superscript
- b) Subscript
- c) Supertext
- d) Toptext

35. Which feature starts a new line whenever a word or sentence reached a border

- a) Text Line
- b) New Line
- c) Text Wrapping
- d) Text Align

**Section B**

**Explain the followings:**

**1. DSR:**

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**2. Security Deposit:**

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**3. Plasticizers:**

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**4. Dissolved Oxygen:**

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**5. Uses of AutoCAD :**

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6. Defect liability period :

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7. RMC & BMC:

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8. Location of following traps used in a toilet:

- a) Gully trap \_\_\_\_\_
- b) Floor trap \_\_\_\_\_
- c) Bottle trap \_\_\_\_\_

9. Preliminary & Detailed estimate:

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10. Testing of G.I. water line:

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