राष्ट्रीय प्रौद्योगिकी संस्थान वरंगल
वरंगल – 506004, तेलंगाना, भारत
NATIONAL INSTITUTE OF TECHNOLOGY WARANGAL
WARANGAL – 506004, Telangana, INDIA

QUESTION BOOKLET – ADVANCED TEST FOR RECRUITMENT TO TECHNICAL CADRE POSTS

Post:	Sr. Technician
Department	Estate
Advt.:	01/2026 dated 09.01.2026
Date of Exam:	13-08-2026
Duration:	2 Hours
Total Marks:	200 (100 Q X 2 M each)
No. of Questions:	100 (MCQs)
Negative Marking:	1/4th mark for every wrong answer

INSTRUCTIONS TO THE CANDIDATES

1. This is an Advanced Test comprising 100 Multiple Choice Questions (MCQs), to be conducted in MCQ mode only.
2. The duration of the test is 2 hours.
3. Answers must be marked on the OMR Answer Sheet using a blue or black ballpoint pen only. Use of pencils is not permitted.
4. Candidates must write/mark their Roll Number, Post applied for, and other required details in the designated space on the OMR Answer Sheet.
5. Answers marked on the Question Booklet or on any sheet other than the OMR Answer Sheet will not be evaluated.
6. For each question, darken the circle corresponding to the correct answer completely and clearly on the OMR Answer Sheet.
7. Each question carries equal marks. There will be a negative marking of ¼ th mark for every wrong answer. No marks will be deducted for questions not attempted.
8. Mark only one answer for each question. Marking more than one circle for a question will be treated as a wrong answer.
9. Overwriting, cutting, or erasing that leaves the OMR Answer Sheet unclear may result in the answer not being evaluated.
10. No candidate shall leave the examination hall during the test.
11. Any attempt to copy, use unfair means, or communicate with others will result in immediate disqualification.
12. The use of electronic gadgets, calculators, mobile phones, smart watches, or any written/printed material is strictly prohibited.
13. Rough work, if any, should be done only on the separate sheet provided for the purpose.
14. Ensure that the OMR Answer Sheet is duly filled and handed over to the Invigilator before leaving the examination hall.
15. Failure to submit the OMR Answer Sheet will result in cancellation of candidature.
16. All material provided, including rough sheets, must be returned before leaving the examination hall.

1. The standard size of a modular brick in India is

A. 190 × 90 × 90 mm
B. 200 × 100 × 100 mm
C. 210 × 100 × 75 mm
D. 190 × 90 × 80 mm

2. The main purpose of frog in a brick is to

A. Reduce the weight of the brick
B. Increase water absorption
C. Improve bonding with mortar
D. Improve resistance to fire

3. A good quality first-class brick should produce _____ sound when struck.

A. Dull sound
B. Metallic ringing sound
C. Echo sound
D. Flat sound

4. Efflorescence in brickwork is caused mainly by

A. Excessive burning
B. Soluble salts
C. Excessive clay
D. Lack of sand

5. A brick is generally soaked in water before laying in masonry to

A. Increase its weight
B. Increase its compressive strength
C. Remove salts
D. Prevent it from absorbing water from mortar

6. The water absorption of a first-class brick after 24 hours should not exceed

A. 5%
B. 10%
C. 20%
D. 40%

7. The strongest bond commonly used in load-bearing brick masonry is

A. English bond
B. Stretcher bond
C. Header bond
D. Stack bond

8. Gypsum is added to cement mainly to

A. Improve colour
B. Control setting time
C. Increase fineness only
D. Improve strength

9. The final setting time of ordinary Portland cement should generally not exceed

A. 2 hours B. 5 hours
C. 10 hours D. 24 hours

10. Soundness of cement refers to its ability to

A. Resist Setting speed B. Resist excessive expansion after setting
C. Resist impact D. Maintain Colour uniformity

11. The loss of strength of cement due to prolonged storage is mainly caused by

A. Exposure to moisture B. Exposure to sunlight only
C. Excessive vibration D. Low temperature only

12. The water-cement ratio primarily affects

A. Initial Setting B. Curing period
C. Final Setting D. Workability and strength

13. The main purpose of coarse aggregate in concrete is to

A. Provide bulk and reduce cement quantity B. Increase water content
C. Prevent hydration D. Replace reinforcement

14. A slump test is primarily used to measure

A. Shear Strength B. Workability
C. Tensile strength D. Density of mix

15. Bleeding in concrete is

A. Separation of cement from water B. Rise of water to the surface
C. Loss of aggregate D. Cracking due to reinforcement

16. Honeycombing in concrete is mainly caused by

A. Excessive curing B. Inadequate compaction
C. Excessive reinforcement D. Low cement content

17. Excessive vibration may cause

A. Better grading always B. Segregation
C. Better Compaction D. Reduced density

18. The minimum curing period for Ordinary Portland Cement concrete is generally

A. 3 days B. 5 days

C. 7 days D. 21 days

19. The target mean strength of M20 grade concrete with standard deviation 4.0 N/mm² is approximately

A. 20.4 N/mm² B. 23.3 N/mm²

C. 26.6 N/mm² D. 30 N/mm²

20. The standard concrete cube used for compressive strength testing in India is generally

A. 100 mm B. 150 mm

C. 200 mm D. 300 mm

21. The approximate density of normal-weight concrete is

A. 500 kg/m³ B. 1000 kg/m³

C. 2400 kg/m³ D. 5000 kg/m³

22. The nominal mix 1:2:4 represents

A. Cement:Sand:Aggregate B. Sand:Cement:Aggregate

C. Aggregate:Sand:Cement D.Cement:Aggregate:Sand

23. Bulking of sand is due to

A. Dry condition B. Moisture content

C. Particle size D. Temperature

24. A well-graded aggregate contains

A. Particles of only one size B. A good distribution of different sizes

C. Only fine particles D. Only coarse particles

25. Aggregate impact value indicates

A. Toughness B. Hardness

C. Abrasion D. Absorption

26. The main function of an admixture in concrete is to

A. Modify selected properties B. Replace all cement

C. Eliminate curing D. Eliminate aggregate

27. Seasoning of timber is done mainly to

A. Improve colour B. Reduce moisture content

C. Increase Strength D. Prevent termite attack

28. The most common defect caused by irregular growth of timber is

A. Knot B. Slump

C. Honeycomb D. Efflorescence

29. Termite attack in timber can be reduced by

A. Increasing moisture B. Proper preservative treatment

C. Seasoning D. Immersing it in water

30. The minimum bearing of an RCC lintel on each side of an opening is generally

A. 50 mm B. 100 mm

C. 150 mm D. 300 mm

31. Thickness of DPC provided in residential buildings is generally

A. 10 mm to 25 mm B. 25 mm to 40 mm

C. 75 mm to 100 mm D. 100 to 150 mm

32. The maximum thickness of mortar joints in good brick masonry is generally

A. 25 mm B. 20 mm

C. 10 mm D. 5 mm

33. Concrete should normally be placed within approximately _____ after mixing.

A. 10 minutes B. 30 minutes

C. 2 hours D. 5 hours

34. Minimum grade of concrete for RCC is
A. M10 B. M15
C. M20 D. M25

35. The primary purpose of lintels provided over doors and windows is to
A. Improve ventilation B. Support load of masonry above
C. Decorate the opening D. Prevent rainwater entry

36. The main purpose of applying shuttering oil is to
A. Increase concrete strength B. Prevent cement hydration
C. Decrease water-cement ratio D. Facilitate stripping of formwork

37. The instrument commonly used to check the verticality of a wall is
A. Spirit level B. Plumb bob
C. Measuring tape D. Steel scale

38. Chain surveying is most suitable for
A. Small, fairly level & open areas B. Small mountainous areas
C. Forest areas D. Precise astronomical surveys

39. The standard metric chain commonly used in surveying is
A. 5 m B. 10 m
C. 20 m D. 50 m

40. Ranging is the process of
A. Measuring distances B. Establishing intermediate points
C. Measuring reduced levels D. Measuring bearing

41. The 3-4-5 method is used on site to
A. Set out a right angle B. Measure concrete strength
C. Determine soil density D. Find cement fineness

42. If a tape is shorter than its standard length, the measured distance is
A. Equal to the true distance B. Less than the true distance
C. Greater than the true distance D. Unrelated to the true distance

43. If the HI is 101.250 m and the staff reading on another point is 2.000 m, its RL is

A. 99.250 m B. 100.250 m

C. 103.250 m D. 101.250 m

44. A line joining points of equal elevation on ground is called a

A. Horizontal line B. Level line

C. Datum line D. Contour line

45. A benchmark is a point whose _____ is known

A. Horizontal distance B. Reduced level

C. Bearing D. Soil type

46. The staff reading taken on a point of known RL is called

A. Foresight B. Backsight

C. Intermediate sight D. Check sight

47. A change point is used when

A. Instrument is shifted B. The chain is broken

C. Fly levelling is done D. The staff is shifted

48. If a staff reading increases, the point is generally _____ relative to the Instrument line

A. Higher B. Lower

C. At the same elevation D. Not related to

49. The symbol CL on a foundation drawing generally denotes

A. Cement Level B. Centre Line

C. Column Length D. Construction Line

50. In standard engineering drawings, scale 1:100 means, 1 cm on drawing represents

A. 1 cm on ground B. 10 cm on ground

C. 1 m on ground D. 10 m on ground

51. Which type of line is used to represent hidden edges in engineering drawings?

A. Continuous thick line
B. Continuous thin line
C. Dashed thin line
D. Chain thin line

52. A Plan of a building represents the view obtained by cutting horizontal section at

A. Roof level
B. Window sill level
C. Plinth level
D. Foundation level

53. A dimension line is used to

A. Indicate size or distance
B. Show material colour
C. Show concrete grade only
D. Indicate north direction

54. The symbol "NGL" on construction drawings generally means

A. New Ground Level
B. Normal Grade Line
C. Natural Ground Level
D. Nominal ground Line

55. The abbreviation "FFL" generally means

A. Finished Floor Level
B. Foundation Floor Level
C. Final Formwork Level
D. Finished Foundation Level

56. In reinforcement drawings, symbol 'Ø' or 'T' generally denotes

A. Length of bar
B. Diameter of bar
C. Grade of steel
D. Pitch of stirrups

57. Weight of 1 bag of cement in India is

A. 25 kg
B. 40 kg
C. 50 kg
D. 60 kg

58. Cement bags should preferably be stacked in a warehouse up to a maximum height of

A. 5 bags
B. 10 bags
C. 15 bags
D. 20 bags

59. Detailed Estimate is prepared by which method?

A. Plinth area method
B. Cubical content method
C. Item rate/Unit rate method
D. Approximate quantity method

60. The unit of measurement for plastering is generally

A. m B. m^2

C. m^3 D. kg

61. If 10 mm bars are placed at 200 mm centre-to-centre spacing over a slab width of 2.0 m, the number of bars required is

A. 5 B. 6

C. 10 D. 11

62. The quantity of paint on walls is measured in

A. Cubic metres B. Square metres

C. Kilograms D. Litres

63. Reinforcement steel is generally measured by

A. Volume B. Area

C. Weight D. Length only

64. The weight of a 12 mm diameter bar per metre is approximately

A. 0.395 kg B. 0.617 kg

C. 0.888 kg D. 1.58 kg

65. Stirrups in a beam are mainly provided to resist

A. Shear B. Temperature only

C. Settlement only D. Dead load only

66. In a one-way slab, main reinforcement is generally placed

A. Along the shorter span B. Along the longer span

C. At corners D. Outside the concrete

67. In nominal mix concrete, the proportions are generally expressed by

A. Weight of water only B. Cement, fine aggregate and coarse aggregate

C. Weight of reinforcement D. Coarse aggregate, fine aggregate and cement

68. Concrete should generally not be dropped freely from a height exceeding

A. 0.5 m B. 1.5 m

C. 3.0 m D. 5.0 m

69. For 1 m^3 of finished concrete, the dry volume of ingredients is generally taken as approximately

A. 0.67 m^3 B. 1.00 m^3

C. 1.54 m^3 D. 3.00 m^3

70. Increasing water content beyond the required amount generally

A. Reduces strength B. Increases strength

C. Eliminates shrinkage D. Prevents bleeding

71. A concrete cover block is used to

A. Maintain required cover to reinforcement B. Increase water content

C. Replace reinforcement D. Support formwork permanently

72. Clay particles are generally

A. Larger than gravel B. Very fine and cohesive

C. Non-cohesive only D. Larger than sand

73. Which soil type is characterized by its high plasticity and significant volume change when moisture varies?

A. Gravel B. Sandy soil

C. Laterite soil D. Black Cotton Soil

74. Settlement of a foundation occurs mainly due to

A. Compression of soil under load B. Increase in brick size

C. Cement hydration only D. Steel corrosion only

75. A raft foundation is used when

A. Soil bearing capacity is high B. Soil bearing capacity is low

C. For lightweight structures D. For isolated columns

76. The purpose of a plinth beam is generally to

A. Tie walls/columns and distribute loads B. Replace foundations elements

C. Support columns and beams D. Support roof slab

77. Differential settlement means

A. Settlement of soil before construction

B. Settlement of soil after construction

C. Settlement before and after construction

D. Unequal settlement of different parts of a structure

78. Plate Load Test is performed at field to determine

A. Safe bearing capacity and settlement B. Compaction energy

C. Permeability coefficient D. Plastic limit

79. Standard per capita water demand for Indian cities in Liters per capita per day (LPCD) for domestic purpose as per IS 1172 is

A. 80 B. 135

C. 200 D. 340

80. Turbidity in water is mainly caused by

A. Suspended particles B. Dissolved oxygen only

C. Chlorine only D. Pure water molecules

81. The pH of neutral water at room temperature is approximately

A. 2 B. 5

C. 7 D. 12

82. Boiling can remove

A. Temporary hardness B. All types of hardness

C. Turbidity only D. Chloride hardness

83. Alum is commonly used as

A. An Aerator B. A disinfectant only

C. A coagulant D. A filter medium

84. A rapid sand filter removes

A. Suspended particles B. Dissolved salts

C. Hardness D. Gases

85. The most common method of water distribution in hilly areas is

A. Gravity system B. Pumping system

C. Combined system D. Ring system

86. The most suitable disinfectant for swimming pools is

A. Ozone B. Chlorine

C. UV radiation D. Bromine

87. The primary purpose of a trap in a sanitary plumbing system?
A. To increase flow velocity B. To regulate water pressure
C. To filter solid waste D. To prevent entry of foul gases

88. Septic tank works on the principle of
A. Filtration B. Anaerobic digestion and sedimentation
C. Chemical precipitation D. Aerobic oxidation

89. Biochemical Oxygen Demand (BOD) is a measure of
A. Total suspended solids B. Inorganic content
C. Dissolved oxygen level D. Organic content

90. The most common indicator of sewage pollution in water is
A. E. coli bacteria B. Turbidity
C. Chlorides D. Hardness

91. The most common method of sludge drying is
A. Mechanical drying B. Sludge drying beds
C. Chemical treatment D. Incineration

92. The three Rs of waste management are
A. Reduce, Reuse, Recycle B. Remove, Repair, Replace
C. Read, Record, Report D. Reduce, Reject, Return

93. The most common greenhouse gas emitted from landfills is
A. Carbon dioxide B. Methane
C. Nitrous oxide D. Sulfur dioxide

94. The term "carbon footprint" in an activity refers to
A. Total carbon dioxide emissions B. Total methane emissions by an activity
C. Total solid waste generated D. Total greenhouse gas emissions

95. PPE stands for
A. Personal Project Evaluation B. Public Protection Engineering
C. Project Planning Estimating D. Personal Protective Equipment

96. Safety helmets are tested for
A. Impact resistance
B. Fire resistance
C. Water resistance
D. Chemical resistance

97. Colour of safety helmet standardly worn by civil Engineers/site supervisors is
A. Yellow
B. Green
C. Red
D. White

98. Full body safety harness (safety belt) must be worn when working at height exceeding
A. 1.8 meters
B. 0.5 meters
C. 5.0 meters
D. 10.0 meters

99. Yellow safety sign with black triangle indicates
A. Fire exit
B. Mandatory instruction
C. First aid post
D. Warning/Caution/danger

100. Housekeeping on construction site refers to
A. Keeping site organized
B. Cooking food for workers
C. Designing floor plans
D. Painting of rooms of workers

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