095/2025

Question Booklet Alpha Code: **A**

Question Booklet Serial Number:

Total No. of questions : 100 Time : 1 Hour 30 Minutes

Maximum : 100 Marks

INSTRUCTIONS TO CANDIDATES

1. The question paper will be given in the form of a Question Booklet. There will be four versions of question booklets with question booklet alpha code viz. A, B, C & D.
2. The Question Booklet Alpha Code will be printed on the top left margin of the facing sheet of the question booklet.
3. The Question Booklet Alpha Code allotted to you will be noted in your seating position in the Examination Hall.
4. If you get a question booklet where the alpha code does not match to the allotted alpha code in the seating position, please draw the attention of the Invigilator IMMEDIATELY.
5. The Question Booklet Serial Number is printed on the top right margin of the facing sheet. If your question booklet is un-numbered, please get it replaced by new question booklet with same alpha code.
6. The question booklet will be sealed at the middle of the right margin. Candidate should not open the question booklet, until the indication is given to start answering.
7. Immediately after the commencement of the examination, the candidate should check that the question booklet supplied to him contains all the 100 questions in serial order. The question booklet does not have unprinted or torn or missing pages and if so he/she should bring it to the notice of the Invigilator and get it replaced by a complete booklet with same alpha code. This is most important.
8. A blank sheet of paper is attached to the question booklet. This may be used for rough work.
9. **Please read carefully all the instructions on the reverse of the Answer Sheet before marking your answers.**
10. Each question is provided with four choices (A), (B), (C) and (D) having one correct answer. Choose the correct answer and darken the bubble corresponding to the question number using Blue or Black Ball-Point Pen in the OMR Answer Sheet.
11. **Each correct answer carries 1 mark and for each wrong answer 1/3 mark will be deducted. No negative mark for unattended questions.**
12. No candidate will be allowed to leave the examination hall till the end of the session and without handing over his/her Answer Sheet to the Invigilator. Candidates should ensure that the Invigilator has verified all the entries in the Register Number Coding Sheet and that the Invigilator has affixed his/her signature in the space provided.
13. Strict compliance of instructions is essential. Any malpractice or attempt to commit any kind of malpractice in the Examination will result in the disqualification of the candidate.

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Maximum : 100 marks

Time : 1 hour and 30 minutes

1. Basalt is an example of :

(A) Plutonic rock (B) Sedimentary rock

(C) Volcanic rock (D) Hypabyssal rock

2. Gneiss is formed from :

(A) Trap (B) Granite

(C) Basalt (D) Sandstone

3. Opaque glazing on clay products done with the substance called :

(A) Slurry (B) Salt

(C) Slit (D) Slip

4. Mixing the brick earth with the ingredients in dry state :

(A) Weathering (B) Blending

(C) Tempering (D) Moulding

5. First class brick should have the crushing strength not less than :

(A) 5.5 N/m^2 (B) 55 N/mm^2

(C) 5.5 N/mm^2 (D) 5.5 N/cm^2

6. In cement, lime saturation factor should not be greater than :

(A) 0.5 (B) 0.66

(C) 1.2 (D) 1.02

7. Maximum Weight of insoluble residue in cement :

(A) 5% (B) 2.75%

(C) 1.50% (D) 10%

8. Mortar with bulk density over 22 KN/m^3 used as :

(A) Sound absorbing mortar (B) X-ray shielding mortar

(C) Light weight mortar (D) Fire-resistant mortar

9. The test commonly used for abrasion test to determine the hardness or resistance to wear for aggregates in concrete :

(A) Los Angeles abrasion test
(B) Deval abrasion test
(C) Dorry abrasion test
(D) Impact test

10. Water required for one bag of cement is 30 litres, the water-cement ratio is :

(A) 0.50
(B) 0.60
(C) 0.70
(D) 0.80

11. The defect in timber which indicates soft tissue or skin which covers the wound of a tree :

(A) Burls
(B) Druxiness
(C) Foxiness
(D) Callus

12. The thin layer of sap between sap wood and inner bark is known as :

(A) Cambium layer
(B) Medulla
(C) Heart wood
(D) Medullary rays

13. A thermo-plastic resin produced from ethylene from petroleum is :

(A) Acrylic
(B) Styrene
(C) Vinyl
(D) Alkyd

14. PVCN for paint used for prime coat on metal :

(A) 10 to 15
(B) 15 to 20
(C) 25 to 40
(D) 45 to 60

15. The theoretical amount of water required for lime slaking with the weight of CaO is :

(A) 32%
(B) 26%
(C) 42%
(D) 55%

16. Which type of pile is constructed by inserting a steel shell into the ground and then filling it with concrete, leaving the shell in place?

(A) Frankie pile
(B) Simplex pile
(C) Raymond pile
(D) Vibro-pile

17. A course of stone masonry provided immediately above the cornice is called :

(A) Blocking course
(B) Coping
(C) Parapet
(D) Frieze

18. In a brick nogging partition wall, what is the term used for the vertical wooden members that support the brick infill?

(A) Joists
(B) Battens
(C) Rafters
(D) Studs

19. The most suitable lintel for spans exceeding 2 meters and carrying heavy loads is :

(A) Stone lintel
(B) Timber lintel
(C) Reinforced concrete lintel
(D) Brick lintel

20. The line along which the resultant of all the forces (including self-weight) passes in an arch is called :

(A) Axis
(B) Thrust line
(C) Load vector
(D) Haunch line

21. The most suitable underpinning method for confined spaces and poor soil condition is:

(A) Mass concrete underpinning
(B) Micropile underpinning
(C) Needle beam method
(D) Timber shoring

22. A bond consisting of heading and stretching courses so arranged that one heading course comes after several stretching courses is called :

(A) Facing bond
(B) Raking bond
(C) Dutch bond
(D) Heading bond

23. In raking shoring, the inclination of the rakers is generally :

(A) 30° to 45° with the horizontal
(B) 45° to 75° with the vertical
(C) 60° to 75° with the horizontal
(D) 45° to 75° with the horizontal

24. Which type of carpentry joint involves a slot across the grain in one piece and a matching projection in the other?

(A) Mortise and Tenon
(B) Dado joint
(C) Cross lap joint
(D) Dovetail

25. Which chemical is commonly used in anti-termite treatment in buildings?

(A) Sodium chloride
(B) DDT
(C) Chlorpyrifos
(D) Sulfuric acid

26. The projections which help in securing the head of a door frame to the masonry are called :

(A) horns (B) stops

(C) reveals (D) styles

27. Which type of window is specifically provided to supply light and air to an enclosed space located just below the roof?

(A) Bay window (B) Dormer window

(C) Louvered window (D) Clerestory window

28. Which type of flooring is made by mixing marble chips with white or colored cement and then polishing the surface for a smooth, decorative finish?

(A) Mosaic flooring (B) Marble slab flooring

(C) Concrete flooring (D) Terrazzo flooring

29. The type of truss commonly used for spans varying from 5 to 9 metre is :

(A) Queen post truss (B) King post truss

(C) Mansard truss (D) Composite truss

30. The uppermost horizontal structural member supporting the common rafters in a sloped roof is called :

(A) Ridge board (B) Purlin

(C) Cleat (D) Eaves

31. Which is the habitable space on the roof of the building with or without toilet facilities?

(A) Alley (B) Barsati

(C) Balcony (D) Cabin

32. What is the "Primary Goal" of prospect in Building Design?

(A) To improve indoor lighting (B) To enrich outside view

(C) To increase privacy (D) To reduce construction cost

33. According to local Building Bye-Laws as per IS Code, the maximum number of private dwelling units that can be occupied by members of one or two families in Sub division A-2 is :

(A) More than 20 persons (B) More than 40 persons

(C) More than 3 persons (D) Only one person

34. According to the general fire safety requirements, what should be provided in building with more than one storey?

(A) Fire alarms

(B) Sprinkler system

(C) Fire extinguishers

(D) Liberally designed and safe fire - proof exists or escapes

35. What is the recommended percentage of the total plant area that should be allocated for green belts, according to the stipulations of MOEF?

(A) 20% (B) 25%

(C) 33% (D) 40%

36. Who developed the first Microprocessor?

(A) Ted Hoff (B) Vinod Dham

(C) Faggin (D) Shima

37. Which of the following is NOT a component of a Computer Aided Design (CAD) package?

(A) Design (B) Analysis

(C) Visualisation (D) Programming

38. What is the primary function of the Title Bar in Auto CAD?

(A) To display additional menu

(B) To toggle the grid ON and OFF

(C) To show the name of the drawing currently used

(D) To change the properties of entities

39. What is the purpose of the Auto CAD in installation wizard?

(A) To provide information about the product

(B) To update the Operating System

(C) To contain all installation related materials in one place

(D) To install additional software

40. What is the command used to highlight your marks?

(A) REVCLOUD (B) SPLINE

(C) PLINE (D) RECTANGLE

41. Advantages of RCC is :

(A) Have better resistance to fire than steel

(B) Long service life

(C) Can be casted to any shape

(D) All of the above

42. The M20 grade concrete have proportion of Binding material : Fine Aggregate : Coarse Aggregate is :

(A) 1 : 5 : 10 (B) 1 : 4 : 8

(C) 1 : 1.5 : 3 (D) 1 : 1 : 2

43. The clear cover to reinforcement for slabs is :

(A) 15 mm

(B) Diameter of the bar

(C) The higher value of (A) and (B) stated above

(D) None of the above

44. The mass per meter length of 18 mm dia bars is _____ kg.

(A) 1.58 (B) 2.00

(C) 2.47 (D) 2.98

45. The temporary structure used for the construction of circular shaped works such arch, dome etc is called :

(A) Scaffolding (B) Mould

(C) Centering (D) None of the above

46. The slump in millimeters recommended for mass concrete is :

(A) 90 to 100 (B) 40 to 50

(C) 80 to 150 (D) 25 to 50

47. Columns are called short, when :

(A) Its length is less than 8 times of its diameter

(B) Its Slenderness ratio is less than 32

(C) Any of the above

(D) None of the above

48. A slab which is supported on all its four edges and the ratio of its long span to short span is NOT more than 2 is called a :

(A) One way slab (B) Two way slab

(C) Four way slab (D) None of the above

49. A structural steel member carrying direct tension is called

(A) Strut (B) Tie

(C) Any of the above (D) None of the above

50. Unwin's formula is used to find the :

(A) Diameter of the rivet
(B) Length of the rivet
(C) Thickness of the plates
(D) Length of the plates

51. The water carriage system is also called :

(A) Night soil disposal system
(B) Dry system
(C) Combined system
(D) Flush down system

52. Which pipe is provided to maintain the water seal in traps by preventing siphonage?

(A) Soil pipe
(B) Waste pipe
(C) Anti-siphonage pipe
(D) Stack pipe

53. What is the typical diameter of a waste pipe connected to a bath tub?

(A) 10 mm
(B) 25 mm
(C) 50 mm
(D) 100 mm

54. Why are drop manholes used?

(A) To reduce manhole size
(B) To connect sewers at the same level
(C) To avoid steep gradients in branch sewers
(D) To prevent corrosion

55. What is the typical spacing between manholes in straight reaches of sewer lines?

(A) 15 – 30 m
(B) 45 – 90 m
(C) 100 – 120 m
(D) 10 – 20 m

56. The class 9 of hill road are 6m wide and are designed to carry :

(A) 2 tonne vehicle
(B) 3 tonne vehicle
(C) 1 tonne vehicle
(D) 4 tonne vehicle

57. The maximum super elevation on hill road should be not exceed _____ percentage.

(A) 10%
(B) 8%
(C) 12%
(D) 6%

58. In flexible pavement sub base course is in between :

(A) soil subgrade and base course
(B) surface course and base course
(C) soil subgrade and surface course
(D) none of the above

59. The culvert having total length less than _____ is called vent way.

(A) 2 m (B) 1.5 m

(C) 1 m (D) None of the above

60. Potoon bridges is _____ type of bridge.

(A) suspension bridge (B) floating bridge

(C) flying bridge (D) none of the above

61. Which of the following not a conveyance tunnel?

(A) hydropower tunnel (B) water supply tunnel

(C) sewage tunnel (D) navigation tunnel

62. The first designed rail section in Indian railway :

(A) flat footed type (B) bull headed type

(C) double headed shape (D) none of the above

63. For meter gauge the length of wooden sleepers is :

(A) 1.52 (B) 1.88

(C) 1.83 (D) 1.93

64. When two tracks of same gauge or of different gauge cross each other at any angle is known as?

(A) double junction (B) tandem

(C) scissors cross (D) diamond crossing

65. The advance starter signal is provided about _____m beyond the trailing switches.

(A) 180 m (B) 160 m

(C) 164 m (D) 146 m

66. Quantity of water flows through the surface of the earth by a rainfall is termed as :

(A) Quantity of rainfall (B) Rainfall losses

(C) Runoff (D) Catchments

67. A line on rainfall map, joining places having the same average annual rainfall is known as :

(A) Isohyets (B) Hydrograph

(C) Contour line (D) Level line

68. The relation between the area of crop irrigated and the quantity of irrigation water required during the entire period of the growth of the crop is called :

(A) Crop period (B) Delta

(C) Base period (D) Duty

69. An area in which crop is grown at a particular time or crop season is termed as :

(A) Culturable commanded Area

(B) Culturable Cultivated Area

(C) Culturable Uncultivated Area

(D) Gross commanded Area

70. A season in which the crops are sown by the beginning of south west-monsoon and they are harvested in autumn, is known as :

(A) Kharif season (B) Rabi season

(C) Paleo (D) Hydrology

71. A dam having seepage of water is sufficient for the growth of the crop and if no additional surface watering is necessary, such type of dam is called

(A) Detention dam (B) Debris dam

(C) Water spread dam (D) Subsurface irrigation

72. A major part or the entire pounding of water is achieved by a raised crest and a smaller part is achieved by the shutters, then this barrier is known as :

(A) Barrages (B) Weir

(C) Sill or crest (D) Reservoirs

73. The difference of the water level in the forebay and that in the tail race is called :

(A) Gross head (B) Net head

(C) Operating head (D) Hydraulic efficiency of plant

74. A canal carry water to the agricultural fields is called :

(A) Carrier canal (B) Feeder canal

(C) Power canal (D) Irrigation canal

75. A structure in which the canal flows over the drainage and H.F.L. of the drainage is lower than the canal bed level is called :

(A) An aqueduct (B) Siphon aqueduct

(C) Superpassage (D) Canal siphon

76. What is the annual periodic payment for repayment of the capital amount invested by a party?

(A) Capital cost (B) Annuity

(C) Depreciation (D) Outgoings

77. Which brick wall thickness is measured in sq.m?

(A) 10 cm (B) 50 cm

(C) 20 cm (D) 30 cm

78. What is the name given to built up area of building measured at floor level of any storey?

(A) Floor area (B) Carpet area

(C) Circulation area (D) Plinth area

79. What is the minimum lead for earth work excavation?

(A) 10 m (B) 20 m

(C) 30 m (D) 50 m

80. What percentage is added as contingencies in approximate estimate?

(A) 1% to 5% (B) 5% to 10%

(C) 10% to 12% (D) 10% to 15%

81. For a given contour interval, the horizontal equivalent depends upon :

(A) Nature of the ground (B) Purpose and extent of survey

(C) Steepness of the ground (D) Scale of map

82. In hilly country, the spacing of cross section is usually taken as :

(A) 20 m (B) 50 m

(C) 75 m (D) 100 m

83. Line passing through the saddles and summits gives the :

(A) Boning - in (B) Watershed line

(C) Grade contour (D) Shooting – in grade

84. For plotting the profile, the length of the ordinates should be between :

(A) 2 cm to 10 cm (B) 4 cm to 15 cm

(C) 5 cm to 20 cm (D) 10 cm to 25 cm

85. Topographical Survey, Cadastral Survey and City Survey are included in :

(A) Aerial Survey (B) Geological Survey

(C) Mine Survey (D) Land Survey

86. Distance is directly determined by :

(A) Passometer (B) Pedometer

(C) Odometer (D) Speedometer

87. The bearing of a line AB is 152°20' and the angle ABC is 124°38'. What is the bearing of BC?

(A) 90°58' (B) 95°58'

(C) 96°58' (D) 97°58'

88. For establishing benchmarks with high precision we conduct :

(A) Profile levelling (B) Reciprocal levelling

(C) Precise levelling (D) Barometric levelling

89. Width of a steel band is :

(A) 14 mm (B) 15 mm

(C) 16 mm (D) 20 mm

90. Two – peg method is the permanent adjustment of :

(A) Theodolite (B) Dumpy level

(C) Prismatic Compass (D) Plane table

91. The centriod of a semicircle lies at a distance of _____ from its base, measured along the vertical radius :

(A) $4r/3\pi$ (B) $3r/8$

(C) $4\pi/3r$ (D) $r/2$

92. The Lami's Theorem is applicable only for :

(A) Concurrent force (B) Coplanar force

(C) Coplanar and Concurrent force (D) Any type of force

93. When a section is subjected to two equal and opposite pulls, as a result of which the body tends to increase its length the stress induced is called?

(A) Compressive (B) Tensile

(C) Thermal stress (D) Shear stress

94. Which state of equilibrium example is, A cone resting on its base?

(A) Unstable (B) Neutral

(C) Stable (D) Both (A) and (B)

95. What is the ratio of limiting friction to the normal reaction between two bodies?

(A) angle of friction (B) coefficient of friction

(C) dynamic friction (D) law of friction

96. Which are the incorrect statement?

(1) Limiting friction is equal to sliding friction

(2) Rolling friction is more than the sliding friction

(3) The force of friction does not depend upon the area of contact

(4) Sliding friction is always less than limiting friction

(A) Both (1) and (2) (B) Both (3) and (4)

(C) Both (1) and (3) (D) Both (2) and (4)

97. What is the term used for maximum stress attained by a material before rupture?

(A) Working stress (B) Ultimate stress

(C) Compressive stress (D) Tensile stress

98. Which of the following is not a mechanical property of a material?

(A) Malleability (B) Ductility

(C) Elasticity (D) None of these

99. If a number of coplanar forces act simultaneously on a particle, the algebraic sum of the moments of all the forces about any point is equal to the moment of their resultant force about the same point. Which principle does this statement describe?

(A) Hook's law (B) Lami's theorem

(C) Principle of resolution (D) Varignon's principle

100. The property of certain material of returning back to their original position after removing the external force is known as :

(A) Elasticity (B) Plasticity

(C) Ductility (D) Malleability

SPACE FOR ROUGH WORK

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