008/2021

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. Blank sheets of paper is attached to the question booklet. These 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.

008/2021-A

Total Marks : 100 Marks

Time : 1 hour and 15 minutes

1. The trimmed standard size of A1 drawing sheet is _____.
   - (A) 420 mm × 594 mm
   - (B) 297 mm × 420 mm
   - (C) 841 mm × 1189 mm
   - (D) 594 mm × 841 mm

2. Visible out lines are drawn as _____ lines.
   - (A) Continuous thin
   - (B) thick
   - (C) Continuous thick
   - (D) thin

3. Which of the following instrument is used to draw parallel lines at any angle ?
   - (A) Setsquare
   - (B) Clinograph
   - (C) Pentagraph
   - (D) None of these

4. French curves are used to
   - (A) Draw irregular curve
   - (B) Draw conic sections
   - (C) Draw arcs of fixed radius
   - (D) Draw arcs of varying radius

5. In aligned system of dimensioning, the dimensions may be read from
   - (A) Bottom or left hand edges
   - (B) Only from bottom
   - (C) Only from left side
   - (D) Bottom or right hand side

6. If a right angled triangle is made to revolute about one of its perpendicular sides, the solid formed is known as
   - (A) Cylinder
   - (B) Cone
   - (C) Prism
   - (D) Pyramid

7. In the first angle projection method, object is assumed to be placed in
   - (A) Third Quadrant
   - (B) Second Quadrant
   - (C) First Quadrant
   - (D) Fourth Quadrant

8. The unit of RF is _____.
   - (A) cm
   - (B) cm^2
   - (C) cm^3
   - (D) None of these

9. Diagonal scale is used to measure
  (A) Three dimension
  (B) Two dimension
  (C) One dimension
  (D) Any of the above

10. The point P is above horizontal plane and behind vertical plane. The point is in the _____ quadrant.
  (A) First
  (B) Second
  (C) Third
  (D) Fourth

11. The fundamental principle of surveying is
  (A) Preparation of plan or map
  (B) To work from part to whole
  (C) To work from whole to part
  (D) All of the above

12. Chainage in chain survey means
  (A) The distance between end stations
  (B) The perpendicular distance of the object from the chain line
  (C) Any distance measured by chain in field
  (D) The distance of the object along the chain line from the zero end of the chain

13. The box of prismatic compass box is made up of
  (A) Aluminium
  (B) Brass
  (C) Steel
  (D) Iron

14. True meridian passes through
  (A) A fixed point
  (B) Equatorial line
  (C) True north and true south
  (D) All of the above

15. Plane table surveying is
  (A) Most suitable for preparing small scale maps
  (B) Particularly advantageous in magnetic area
  (C) Less costlier than theodolite surveying
  (D) All of the above

16. The instrument used for orienting plane table is
  (A) Trough compass
  (B) Circular or box compass
  (C) Both (A) & (B)
  (D) Surveyors compass

17. The first observation taken on turning point is
  (A) Fore sight
  (B) Back sight
  (C) Back sight and Fore sight
  (D) Intermediate sight

18. The Bench Mark established by Survey of India is known as

    (A)   Temporary Bench Mark   (B)   Permanent Bench Mark

    (C)   Arbitrary Bench Mark   (D)   GTS Bench Mark

19. What is the imaginary line joining the centre of the eye piece and the optical centre of the object glass in theodolite ?

    (A)   Axis of telescope   (B)   Axis of altitude bubble tube

    (C)   Vertical axis   (D)   Axis of plate level tube

20. The contour interval depends upon the

    (A)   Nature of the ground   (B)   Scale of map

    (C)   Purpose and extent of survey   (D)   All of the above

21. Contour interval is

    (A)   The vertical distance between two consecutive contours

    (B)   The horizontal distance between two consecutive contours

    (C)   The horizontal distance between two points on same contour

    (D)   The vertical distance between two points on same contour

22. The vertical circle is a circular graduated arc attached to the _____ axis of the telescope.

    (A)   Outer axis   (B)   Vertical axis

    (C)   Inner axis   (D)   Trunnion axis

23. A total station is a combination of

    (A)   EDM and Theodolite

    (B)   Compass and EDM

    (C)   Electronic Theodolite and EDM

    (D)   EDM and Electronic Compass

24. How is the size of theodolite defined ?

    (A)   Diameter   (B)   Radius

    (C)   Height   (D)   Magnification of lens

25. How many inches in one foot ?

    (A)   3   (B)   24

    (C)   6   (D)   12

26. Full form of CADD is

    (A) Computer Aided Drafting and Drawing

    (B) Computer Aided Design and Drafting

    (C) Computer Aided Drawing and Designing

    (D) Computer Aided Design and Drawing

27. Which command to control the size of the drawing area ?

    (A) Units   (B) Snap

    (C) Limits   (D) None of the above

28. The Auto CAD command to edit the length of the object is

    (A) Array   (B) Stretch

    (C) Ortho   (D) Snap

29. The Auto CAD command to draw rounded corner is

    (A) Ortho   (B) Array

    (C) Trim   (D) Fillet

30. To obtain parallel lines, concentric circles and parallel curves _____ is used.

    (A) Fillet   (B) Array

    (C) Offset   (D) Copy

31. The extension for AutoCAD template file is

    (A) .dwg   (B) .dwt

    (C) .doc   (D) .dxf

32. Which among them is not an option for starting print command ?

    (A) PLOT   (B) PRINT

    (C) CTRL+P   (D) PR

33. To plot only a particular portion of a drawing, which option can be selected in plot area panel of PLOT window ?

    (A) Display   (B) Limits

    (C) Window   (D) None of the above

34. Le Chatlier apparatus is used to determine _____ of cement.
    (A) Consistency   (B) Setting times
    (C) Soundness   (D) None of the above

35. Volume of One bag of cement is _____ m^3.
    (A) 50   (B) 0.035
    (C) 1400   (D) 7850

36. The lowermost part of the structure which supports the superstructure and transmits loads of the superstructure to the bearing materials.
    (A) Plinth   (B) Sub-structure
    (C) Basement   (D) None of the above

37. The quotient obtained by dividing the total covered area of all floors by the area of the plot
    (A) F.S.I.   (B) C.A.R.
    (C) F.A.R.   (D) None of the above

38. An impervious barrier constructed across the river to raise the water level is
    (A) Head works   (B) Guide banks
    (C) Regulator   (D) Weir

39. Ten Hectares = _____ acres.
    (A) 100   (B) 1000
    (C) 40.47   (D) 404.7

40. Capillary like structure within the body of a tree that run radially from the core to the bark
    (A) Medullary rays   (B) Medulla
    (C) Cambium layer   (D) Rind gall

41. Plasticity giving ingredient in Brick earth
    (A) Lime   (B) Silica
    (C) Alumina   (D) Iron Oxide

42. The bond having alternate headers and stretchers in face but alternate courses of headers and stretchers in back
    (A) English Bond   (B) Double Flemish
    (C) Single Flemish   (D) English Cross

43. The defect indicated by white spots in a healthy wood is
    (A) Foxiness   (B) Druxiness
    (C) Knot   (D) Rind gall

44. Annual rings are the combination of
   - (A) Heartwood & Sapwood
   - (B) Pith & Medullary rays
   - (C) Sapwood & Medullary rays
   - (D) Heartwood & Cambium layer

45. The irregular triangular walling enclosed by the extrados of the arch, a horizontal line from the crown and a perpendicular line from the springing of the outer curves
   - (A) Skew Back
   - (B) Haunch
   - (C) Voussoirs
   - (D) Spandril

46. The foundation in which a cantilever beam is provided to join column footings
   - (A) Strip footing
   - (B) Strap footing
   - (C) Raft footing
   - (D) Grillage footing

47. The floors used in dancing halls, auditoriums etc.
   - (A) Wooden floor
   - (B) Granolithic floor
   - (C) Terrazzo floor
   - (D) Mosaic floor

48. A two storey truss with upper portion consisting of the king post truss and lower portion of queen post truss
   - (A) Truncated truss
   - (B) Composite truss
   - (C) Mansard truss
   - (D) Bel-fast truss

49. Burning temperature of cement in rotary kiln
   - (A) 900 °C
   - (B) 1400 °C
   - (C) 1700 °C
   - (D) None of the above

50. The most common type of scaffolding used in the construction of brickwork
   - (A) Single scaffolding
   - (B) Brick layer's scaffolding
   - (C) Putlog scaffolding
   - (D) All of the above

51. The process of strengthening of foundation of an existing building
   - (A) D.P.C.
   - (B) Shoring
   - (C) Underpinning
   - (D) Scaffolding

52. The total time between the first watering after sowing a crop and the last watering before its harvesting
   - (A) Base period
   - (B) Duty
   - (C) Delta
   - (D) Crop period

53. The total length of a cranked bar, the depth (D) and angle 45° in case of a beam of effective length (L)

    (A) L + (2*0.6D)
    (B) L – 0.42D
    (C) L + (2*0.42D)
    (D) L – (2*0.42D)

54. Minimum crushing strength of a brick is

    (A) 100 N/mm^2
    (B) 25 N/mm^2
    (C) 10 N/mm^2
    (D) 3.5 N/mm^2

55. The coarse sand passing through a screen with clear openings of _____ is generally used for masonry work.

    (A) 4.75 mm
    (B) 1.5875 mm
    (C) 3.175 mm
    (D) 7.62 mm

56. The property of a lime to set in damp places or in thick masonry is known as

    (A) Slaking
    (B) Hydraulicity
    (C) Calcination
    (D) None of the above

57. Horizontal circulation area of a building may be _____ % of the plinth area of the building.

    (A) 10 to 15
    (B) 60 to 75
    (C) 5 to 6
    (D) None of the above

58. It is the value at the end of utility period without being dismantled is

    (A) Book value
    (B) Market value
    (C) Scrap value
    (D) Salvage value

59. The ratio of weight of material per unit volume to the weight of an equal volume of water at 4 °C

    (A) Porosity
    (B) Density
    (C) Durability
    (D) Specific gravity

60. Siphon Aqueduct is a cross drainage work provided to carry canal over a natural drain when

    (A) Canal bed is above the H.F.L. of the natural drain.
    (B) Canal bed is below the H.F.L. of the natural drain.
    (C) Canal bed is at the same level as the bed of the natural drain.
    (D) Canal bed is below the bed of the natural drain.

61. The relation between duty D in hectare/cumec, delta Δ metres and base period B in days is given by

    (A) Δ = 8.64 B/D
    (B) Δ = 8.64 D/B
    (C) Δ = 8.64 BD
    (D) Δ = 8.64 / BD

62. The geological formation that contain sufficient permeable materials or unconsolidated materials such as sand and gravel
   (A) Catchment area
   (B) Peak flow
   (C) Aquifer
   (D) None of the above

63. The estimate in which approximate total length of wall is found in running metre and this total length multiplied by the rate per running metre of wall gives a fairly accurate cost
   (A) Detailed
   (B) Revised
   (C) Supplementary
   (D) Approximate quantity method

64. At constant pressure, the volume (V) of a given mass of gas is directly proportional to its absolute temperature (T)
   (A) Pascal's Law
   (B) Charles' Law
   (C) Boyle's Law
   (D) Newtons' Law

65. The law states that pressure applied at any point in a liquid at rest is transmitted equally in all directions
   (A) Ohm's Law
   (B) Charles' Law
   (C) Pascal's Law
   (D) Boyle's Law

66. Hydrodynamics is the study of _____ in motion.
   (A) Liquid
   (B) Solid
   (C) Vapour
   (D) Solar

67. In perfect gas equation, the absolute temperature is calculated in terms of
   (A) Degree Celsius
   (B) Degree Kelvin
   (C) Degree Reumer
   (D) Degree Fahrenheit

68. The maximum ratio of span to depth of a Cantilever slab is
   (A) 8
   (B) 12
   (C) 20
   (D) 35

69. The process of proper and accurate measurement of concrete ingredients, on the basis of either weight or volume, for uniformity of concrete mix is known as
   (A) Mixing
   (B) Consolidation
   (C) Curing
   (D) Batching

70. The manner of arrangement of rooms or peculiarity of arrangement of doors and windows in the external walls of the building to receive maximum effect from sun and wind is called
   (A) Aspect
   (B) Prospect
   (C) Privacy
   (D) Roominess

71. When the plot area is 210 m^2 to 1000 m^2, then the permissible covered area of the site should be _____ of the site area.

    (A) 33 %
    (B) 40 %
    (C) 50 %
    (D) 60 %

72. These group include any building used for school, college and other training institutions for day care purposes involving assembly for instruction, education or recreation for not less than 20 students

    (A) Group A
    (B) Group B
    (C) Group C
    (D) Group D

73. The plan which shall be drawn to the same scale as the building plan and shall include plans and sections of private water supply and sewage disposal systems

    (A) Site plan
    (B) Service plan
    (C) Plumbing plan
    (D) Sanitary plan

74. One cubic metre of mild steel weights about

    (A) 7650 kg
    (B) 3650 kg
    (C) 1440 kg
    (D) 7850 kg

75. The painting co-efficient for partly panelled and partly glazed doors or gauged doors for both sides

    (A) 2.25
    (B) 1
    (C) 2
    (D) 3

76. In analysis of rate, the quantity of dry mortar for 100 cubic metre brick work is taken as

    (A) 100 m^3
    (B) 30 m^3
    (C) 0.3 m^3
    (D) 10 m^3

77. In absence of detailed drawings, the percentage of steel, in concrete columns is usually taken as

    (A) 0.7 to 1%
    (B) 1 to 2%
    (C) 1 to 5%
    (D) 5 to 10%

78. The cabin like structure with a covering roof over the staircase is known as

    (A) Chajjah
    (B) Mumty
    (C) Canopy
    (D) Alley

79. The quantity of cement required for a concrete mix of 1 : 2 : 4

    (A) 316.8 kg
    (B) 225 kg
    (C) 126.7 kg
    (D) 633.6 kg

80. A habitable space on the roof of the building with or without toilet facilities
(A) Cellar
(B) Canopy
(C) Barsati
(D) Alcove

81. The mean horizontal distance between the front and rear plot boundaries is called as
(A) Pilaster
(B) Depth of plot
(C) Headroom
(D) Setback

82. The Swani crops are also known as
(A) Rabi crops
(B) Khariff crops
(C) Dry crops
(D) Garden crops

83. This is the structure in which the drainage passes over the irrigation canal
(A) Super passage
(B) Aqueduct
(C) Siphon aqueduct
(D) None of the above

84. The channel or pipe through which carries away water from the power house after it has been passed through the turbine is known as
(A) Water way
(B) Head race
(C) Tail race
(D) Fore bay

85. The flow of water through the particles of soil due to the force of gravity or pressure of head is known as
(A) Penetration
(B) Percolation
(C) Absorption
(D) Transpiration

86. A crop requires a depth of 200 cm of water for a base period of 100 days, duty of water is
(A) 4.32 hectare/cumec
(B) 17.28 hectare/cumec
(C) 100 hectare/cumec
(D) 8.96 hectare/cumec

87. A graph showing variations of discharge with time at a particular point of a natural steam or river
(A) Hyetograph
(B) Hygrograph
(C) Hydrograph
(D) None of the above

88. The first watering before sowing the crop is known as
(A) Kor watering
(B) Paleo
(C) Base period
(D) Crop period

89. Which one of the equations given below is an equation of motion ?

    (A) $v - u = at$

    (B) $v - u = 2as$

    (C) $v = ut + \dfrac{1}{2}at^2$

    (D) $v = u + 2at$

90. Which law states that strain is proportional to stress within elastic limit ?

    (A) Poisson's Law

    (B) Newton's Law

    (C) Joule's Law

    (D) Hooke's Law

91. An effort of 50 kg applied to a simple machine having a velocity ratio of 5 and 80% efficiency, what is its mechanical advantage ?

    (A) 125

    (B) 40

    (C) 4

    (D) None of these

92. At ground level the potential energy of a body is

    (A) Minimum

    (B) Zero

    (C) Infinity

    (D) None of these

93. The ratio of shear stress to shear strain is known as

    (A) Modulus Rigidity

    (B) Young's Modulus

    (C) Bulk Modulus

    (D) Factor of safety

94. Bending moment at supports in case of simply supported beam is always

    (A) Infinity

    (B) Zero

    (C) W/2

    (D) None of these

95. $180° = \underline{\hspace{1cm}}$ radian

    (A) π

    (B) 2π

    (C) $\pi/2$

    (D) $3/2\,\pi$

96. 1 micron = _____ metre

    (A) 10^6

    (B) 10^{-6}

    (C) 10 sq

    (D) 10 cu

97. If one angle of a triangle is equal to the sum of the other two angles, then the triangle is a _____ triangle.

    (A) Equilateral

    (B) Right angled

    (C) Isosceles

    (D) Scalene

98. If the radius of the cylinder is doubled, then its volume will be

    (A) Doubled

    (B) Halved

    (C) Four times

    (D) None of these

99. What is the area of a trapezium of sides 'a' and 'b', and the distance between them is 'h' ?

    (A) $\frac{1}{2}(a+b) \times h$

    (B) $2(a+b) \times h$

    (C) $\frac{1}{2}abh$

    (D) $\frac{1}{2}(a+b)^2 \times h$

100. Vertex angle of a pentagon is _____ and base angles are _____.

    (A) 72°, 54°

    (B) 108°, 36°

    (C) 45°, 67.5°

    (D) 120°, 30°

_____

SPACE FOR ROUGH WORK

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