

139/25

Question Booklet Alpha Code

A

Question Booklet Sl. No.

A

Total Number of Questions : 100

Time : 90 Minutes

Maximum Marks : 100

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/her 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.

A

9. The method of drawing two or more views of an object on a drawing sheet is
 - A) Isometric projection
 - B) Orthographic projection
 - C) Oblique projection
 - D) Perspective projection
10. Which of the following is not an enlarging scale ?
 - A) 1 : 1
 - B) 12 : 2
 - C) 2 : 10
 - D) 1 : 0.2
11. 5 Newton = _____ Dynes.
 - A) 500
 - B) 5000
 - C) 50000
 - D) 500000
12. A motor vehicle covers 100 meters in 6 seconds. How many kilometers will it run in one hour ?
 - A) 94
 - B) 600
 - C) 60
 - D) 16
13. The perimeter of an equilateral triangle having side 45 mm long is
 - A) 15 mm
 - B) 135 mm
 - C) 875 mm
 - D) 45 mm
14. The perimeter of a sector of circle of radius 7 cm and arc length 14.7 cm is
 - A) 102.9 cm
 - B) 28.7 cm
 - C) 36.4 cm
 - D) 21.7 cm
15. Volume of a prism is
 - A) Base side perimeter $\times$ Height
 - B) Lateral surface area $\times$ Height
 - C) Base side area $\times$ Height
 - D) Lateral surface area $\times 2 \times$ Base area
16. The volume of solid cone of 10 cm base dia and 30 cm height is
 - A) 250π
 - B) 300π
 - C) 3000π
 - D) None of these
17. What is the full form of PROM ?
 - A) Protected Read Only Memory
 - B) Programmable Read Operation Only Memory
 - C) Programmable Read Only Memory
 - D) None of the above

18. Which Shortcut Key is used to close the currently active program ?
 A) Alt+F4 B) ARU C) Ctrl+X D) ATE
19. Which Shortcut Key is used to cut selected item ?
 A) Ctrl+S B) Ctrl+X C) Ctrl+P D) Ctrl+End
20. Which Tool is present in Navigation Bar ?
 A) Model Button B) MIRROR C) COPY D) ROTATE
21. Which tool is used to magnify a part of drawing ?
 A) PAN B) COPY C) ZOOM D) None of these
22. Which Function Key is used to toggle between snap mode on and off ?
 A) F8 B) F9 C) F12 D) F4
23. Which command is used for drawing parallel lines ?
 A) OFFSET B) MOVE C) COPY D) ROTATE
24. Which Shortcut Key is used to Select all text ?
 A) Ctrl+S B) Ctrl+X C) Ctrl+P D) Ctrl+A
25. The error in measured length due to incorrect holding of the chain is
 A) Cumulative error B) Compensating error
 C) Instrumental error D) Negative error
26. The method of levelling adopted to determine the difference of levels between two points when it is not possible to set up the level midway between them is
 A) Reciprocal levelling B) Profile levelling
 C) Precise levelling D) Simple levelling
27. Which method is used for plotting inaccessible objects, broken boundaries, rivers etc. ?
 A) Radiation method B) Traversing method
 C) Resection method D) Intersection method
28. When the whole circle bearing of two lines PQ and PR are 40° and 165° respectively. Then the included angle QPR will be
 A) 125° B) 205° C) 160° D) 15°

29. A series of closed contour line on the map represents a _____ if the higher values are inside.
 A) Pond B) Uniform slope C) Hill D) Flat ground
30. When the angular and linear measurements are equally precise in traversing, the balancing of the traverse is done by
 A) Empirical rule B) Transit rule
 C) Bowditch's rule D) None of these
31. In levelling, the correction for curvature (in meter) is equal to
 A) $0.00785D^2$ B) $0.0785D^2$
 C) $0.0112D^2$ D) $0.0673D^2$
32. Remote sensing technique are being usefully employed for the purpose of
 A) Improving natural resource management
 B) Land use
 C) Protection of environment
 D) All of these
33. The back sight reading on a bench mark of reduced level 100.00 is 2.005. If fore sight reading on the point is 1.680, the reduced level of the point is
 A) 100.830 B) 100.325 C) 101.685 D) 103.685
34. Which of the following is a polymineralic rock ?
 A) Quartz sand B) Basalt
 C) Magnesite D) None of the above
35. As per IS : 1077-1970, the minimum crushing strength of bricks is
 A) 3.50 N/mm^2 B) 3.70 N/mm^2 C) 7 N/mm^2 D) 14 N/mm^2
36. Which of the following lime is used for whitewashing and plastering wall ?
 A) High calcium lime B) Rich lime
 C) White lime D) All of the above
37. The materials which is retained on BIS test sieve no. _____ is termed as coursed aggregate.
 A) 430 B) 480 C) 380 D) 420

38. Couple close roof is used for spans is
 A) 3.5 m B) 3.6 m C) 4.2 m D) 5 m
39. Spacing of the joists in filler joists floors is
 A) 80 cm – 120 cm B) 40 cm – 90 cm
 C) 90 cm – 130 cm D) None of the above
40. Thickness of glass for structural glass flooring, is available in the form of tile and slabs is
 A) 8 mm to 12 mm B) 12 mm to 30 mm
 C) 25 mm to 35 mm D) None of the above
41. Which bond is used for ornamental panel in the brick flooring ?
 A) Raking bond B) Zig-Zag bond
 C) Herring bone bond D) Dutch bond
42. Emulsion paint dries quickly in about
 A) 1½ to 2 hours B) ½ to 1 hour
 C) 2 to 3 hours D) None of the above
43. _____ termites cannot survive or live without maintaining a connection with the soil.
 A) White ants B) Drywood
 C) Subterranean D) Non-subterranean
44. _____ is prepared on the basis of plinth area of building, the rate being deducted from the cost of similar building having similar specification, heights and construction, in the locality.
 A) Maintenance Estimate
 B) Plinth Area Estimate
 C) Cube Rate Estimate
 D) Supplementary Estimate
45. In detailed estimate the provision for contingencies, is usually
 A) 0% B) 12 – 15% C) 1% D) 3 – 5%

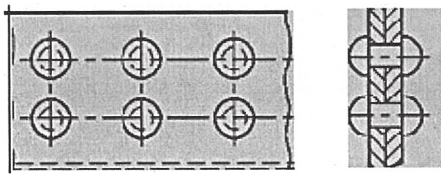
46. The unit of payment for A.C. sheet roofing is in
 A) Quintal B) Metre C) Sq.m. D) Cu.m.
47. The gradual reduction in value with age of a property is known as
 A) revaluation B) depreciation C) appreciation D) valuation
48. A work costing less than Rs. 20,000 is termed as
 A) petty work B) major work C) minor work D) casual work
49. Which classification does row building comes in ?
 A) Residential building B) Educational building
 C) Business building D) Institutional building
50. What is the maximum covered area for an industry ?
 A) 70% of the site area B) 60% of the site area
 C) 50% of the site area D) 40% of the site area
51. What is the other name of circulation in the same floor ?
 A) Vertical circulation B) Air circulation
 C) Horizontal circulation D) Winding circulation
52. The placing of various room or units of a structure in proper correlation of their functions and in due proximity with each other is known as
 A) Circulation B) Apect C) Grouping D) Prospect
53. What is printed list of rates of various items of work maintained by the engineering department ?
 A) Item rates B) Market rates
 C) Analysis of rates D) Schedule of rates
54. The intensity of pressure for a fluid at rest is equal in all directions. This fact is known as
 A) Pascal's law B) Boyle's law
 C) Newton's law D) Charle's law

55. A manometer is used to measure
- | | |
|----------------------------------|-------------------------|
| A) Velocity of liquid | B) Atmospheric pressure |
| C) Pressure in pipe and channels | D) Centre of gravity |
56. The specific weight of water in S.I. units is
- | | |
|-------------------------------------|-------------------------------------|
| A) 1000 N/m^3 | B) 10000 N/m^3 |
| C) $9.81 \times 10^3 \text{ N/m}^3$ | D) $9.81 \times 10^6 \text{ N/m}^3$ |
57. Which of the following is non-rigid dam ?
- | | | | |
|-------------|--------------|------------|---------|
| A) Concrete | B) Rock fill | C) Gravity | D) Arch |
|-------------|--------------|------------|---------|
58. Which element of hydroelectric power plant reduce the water hammer pressure formed in the penstock ?
- | | | | |
|-----------|---------------|-------------|----------------|
| A) Valves | B) Surge tank | C) Turbines | D) Draft tubes |
|-----------|---------------|-------------|----------------|
59. What is the first watering before sowing the crop ?
- | | | | |
|-----------------|----------|----------|---------|
| A) Kor watering | B) Paleo | C) Delta | D) Duty |
|-----------------|----------|----------|---------|
60. Where did the surplus water in weir is allowed to flow ?
- | | | | |
|----------|----------|--------------|-------------|
| A) Gates | B) Crest | C) Spill way | D) Openings |
|----------|----------|--------------|-------------|
61. Which cross drainage work is constructed to carry canal over drainage ?
- | | |
|-----------------|-------------------|
| A) Aqueduct | B) Super passage |
| C) Canal syphon | D) Level crossing |
62. Which irrigation method water is supplied to lower level by the action of gravity ?
- | | | | |
|---------|---------|--------------|---------------|
| A) Flow | B) Lift | C) Sprinkler | D) Subsurface |
|---------|---------|--------------|---------------|
63. The process of unfolding all the surfaces of an object on a plane is called
- | | |
|-----------------------------|-----------------------------|
| A) Development of surfaces | B) Pattern |
| C) Intersection of surfaces | D) Radial dial developments |
64. The development of a pyramid or cone is formed by
- | | |
|-------------------------------------|-------------------------------------|
| A) Parallel line development method | B) Approximate development method |
| C) Radial line development method | D) Triangulation development method |

65. Which refers to the lines that occur when geometric surfaces such as planes, cylinders, cones etc. ?
 A) Intersection of surfaces
 B) Development of surfaces
 C) Line of intersection
 D) Intersection of curves
66. As cylinder have lateral surfaces curved, the line of intersection between them will
 A) Curved
 B) Straighten
 C) Angle
 D) Helix
67. Radial line development has the fold lines, coming from a point which is known as
 A) Helix
 B) Parabola
 C) Apex
 D) Element
68. Which is the other name of pitch diameter ?
 A) Outer diameter
 B) Minor diameter
 C) Major diameter
 D) Effective diameter
69. Choose correct statement about thread angle.
 i. The included angle of acme thread is 29°
 ii. The included angle of metric thread is 60°
 iii. The included angle of BA thread is 28°
 iv. The included angle of BSF thread is 55°
 A) iii and iv
 B) ii and iii
 C) iv only
 D) ii and iv
70. Which nut have a slot is cut half way across the nut ?
 A) Grooved nut
 B) Slotted nut
 C) Castile nut
 D) Swan nut
71. In which type weld symbols, the arrow line should point towards the plate which is prepared ?
 A) Single V butt weld
 B) J butt weld
 C) Fillet weld
 D) Single U butt weld
72. Which statements are correct about the welding joints ?
 1. Lap joint
 2. Tee joint
 3. Edge joint
 4. Butt joint
 a. It is a joint between the edges of the parallel members
 b. It is a joint between overlapping members
 c. It is a joint located at right angles to each others
 d. It is a joint between members lying in the same plane
 A) 1-b 2-d 3-a 4-c
 B) 1-d 2-a 3-b 4-c
 C) 1-b 2-c 3-a 4-d
 D) 1-c 2-a 3-d 4-b

73. Choose correct statement about threaded fasteners.
- i. Machine screws are used where a close tolerance assembly is not required.
 - ii. Machine bolts reused for general assembly work.
 - iii. Cap screws are used when assembly requires more precise.
 - iv. Set screws are used to prevent pulleys from slipping on shafts.
- A) i and iv B) ii and iv C) iii and iv D) iii only
74. Which type of foundation bolts used for hold down large machines ?
- A) Fixed type bolt B) Long cotter bolt
C) Rawl bolt D) Eye foundation bolt
75. Which type of washer can be used for locking the nuts which are located near an edge or corner ?
- A) Lock washer B) Tab washer
C) Spring washer D) Plane washer
76. In pipe fitting, which connector/pipe fitting part helps the pipe line to branch off 90 degree and change in diameter is required ?
- A) Coupling B) Tee branch
C) Eccentric reducer D) Reducing Tee branch
77. Which are the statements correct in the case of Pipe Fitting-Union ?
- I. It has an exterior pipe thread end and a projecting head for fitting in the socket.
 - II. It enables repairs/replacement of the pipe line system without disturbing the other parts of the system.
 - III. It is inserted in a pipe line to permit its connections with little change to the position of pipe.
 - IV. It is used to connect two fittings within a short distance.
- A) I and II B) II and III C) III and IV D) IV and I
78. In which rivet, the upper portion of the rivet head is flat and taper, it is used for heavy engineering work ?
- A) Pan head B) Snap head
C) Tinman's head D) Mushroom head

79. Name of the rivetted joint



- A) Single rivetted lap joint
- B) Single rivetted strap butt joint
- C) Double rivetted lap joint
- D) Double rivetted butt joint

80. Which are the statements correct in the case of spacing of rivet process in rivetted joints ?

- I. The space or distance from the edge of the metal to the centre of any rivet should be atleast $2 \times D$ (diameter) of the rivet.
- II. The space or distance from the edge of the metal to the centre of any rivet should be atleast $2.5 \times D$ (diameter) of the rivet.
- III. The minimum distance between rivets should be two times the diameter of the rivet.
- IV. The minimum distance between rivets should be three times the diameter of the rivet.

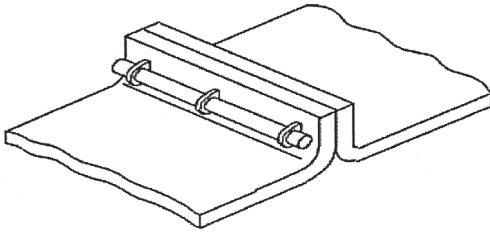
- A) I and II B) II and III C) III and IV D) IV and I

81. Which are the statements correct in the methods of adjusting belt tension ?

- I. When the distance between two pulleys is fixed, the tension of a belt is adjusted by the adjustment screw.
- II. When the distance between two pulleys is not fixed, the tension of the belt is adjusted by using an idler.
- III. When the distance between two pulleys is fixed, the tension of a belt is adjusted by using an idler.
- IV. When the distance between two pulleys is not fixed, the tension of the belt is adjusted by the adjustment screw.

- A) I and II B) II and III C) III and IV D) IV and I

82. Name of the belt fastener type



- A) Aligator B) Creep C) Jackson D) Lagrelle

83. As the belt turns on a pulley it tends to stretch on the contact area of the driving pulley and shorten on the driven pulley. This localised movement of the belt is a direct result of the elastic stretch and is known as

- A) Creep of belt B) Slip of belt
C) Cross belting D) Arc of contact

84. Among them what are advantages of a chain drive power transmission ?

- I. The contact between the chain and the drive sprockets increases the chances of slips.
- II. Positive contact between the chain and the drive sprockets eliminates the possibility of slips.
- III. Chain drive can be used only where the distance between the driving and driven shafts is short.
- IV. Chain drive can be used where there is a large distance between the driving and driven shafts.

- A) I and III B) II and IV
C) I and IV D) II and III

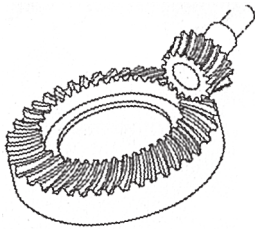
85. Which Gear teeth are cut parallel to the axis of rotation ?

- A) Mitre gear B) Bevel gear
C) Spur gear D) Helical gear

86. In Spur gear, radial distance between the pitch circle and root circle is denoted by letter 'hf' is known as

- A) Base circle B) Addendum
C) Working depth D) Dedendum

87. The name of this gear is



- A) Worm and shaft gear
 - B) Hypoid gear
 - C) Mitre gear
 - D) Herring bone gear
88. In hydraulics, Pascal's law states that
- A) Pressure increase with velocity
 - B) Pressure depends on shape of container
 - C) Pressure applied to a confined fluid is transmitted equally in all directions
 - D) Pressure is inversely proportional to area
89. Which hydraulic pump suitable for very high pressure ?
- A) Vane Pump
 - B) Axial Piston Pump
 - C) Gear Pump
 - D) None of these
90. The main function of a hydraulic accumulator is
- A) To control temperature
 - B) To increase pressure in the system
 - C) To absorb shocks and store energy
 - D) To reduce leakage
91. A pneumatic circuit uses a cascade method for sequencing multiple cylinders. What is the primary function of the cascade method in pneumatic control ?
- A) To control flow rate independent of pressure variations
 - B) To reduce air consumption by recycling exhaust air
 - C) To provide pressure amplification in the system
 - D) To ensure correct sequence of cylinder operations without overlap
92. In a pneumatic system, a quick exhaust valve is installed near a double acting cylinder. What is the main reason for its placement close to the actuator rather than at the control valve ?
- A) To allow faster retraction/extension by exhausting air directly to atmosphere
 - B) To increase air pressure in the cylinder
 - C) To reduce the load on the compressor
 - D) To prevent leakage in the cylinder

93. If a shaft of size 50 mm has a limit of size 50.00 mm to 49.95 mm, what is the tolerance of the shaft ?
A) 0.02 mm B) 0.5 mm C) 0.05 mm D) 0.005 mm
94. "It is the difference between the maximum limit of size and the minimum limit of size, it is always positive and is expressed only as a number without a sign" – what is this ?
A) Zero Line B) Tolerance
C) Fit D) Deviation
95. Which of the following is not a disadvantage of mass production ?
A) Special purpose machines are necessary
B) The cost of piece is reduced
C) Jigs and fixtures are needed
D) Initial expenditure will be very high
96. "DIN" is the systems of limits and fits, following by which country ?
A) German B) Italy C) America D) Japan
97. Which bearing can take both radial and axial load ?
A) Plain bearing
B) Cylindrical roller bearing
C) Deep groove ball bearing
D) Thrust bearing
98. Which bearing is generally used to take axial load only ?
A) Needle bearing B) Thrust bearing
C) Ball bearing D) Roller bearing
99. Which bearing is also called an anti-friction bearing ?
A) Hydrostatic bearing B) Ball and roller bearing
C) Sleeve bearing D) Journal bearing
100. In a sliding contact bearing, the coefficient of friction is given by
A) Tower's equation B) Reynold's equation
C) Euler's equation D) Petroff's equation
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Space for Rough Work

