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Question Booklet Alpha Code

A

Question Booklet Sl. No.

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.

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1. How many numbers of cuts in a 250 mm flat bastard double cut file over a length in 1 cm ?  
 A) 7.1                              B) 12                              C) 8                              D) 10
  
2. Which is the angle of an edge of a triangular file ?  
 A) 90 degree                              B) 60 degree  
 C) 30 degree                              D) 45 degree
  
3. Which is the most suitable pitch of a hack-saw blade cutting mild steel or cast iron ?  
 A) 1.8 mm                              B) 0.8 mm                              C) 1.4 mm                              D) 1.0 mm
  
4. While chipping, the clearance angle is the angle between  
 A) The working surface of the job and the top surface of the cutting edge of chisel  
 B) The working surface of the job and the bottom surface of the cutting edge of chisel  
 C) The surface at right angle to the cutting edge of chisel and the working surface of the job  
 D) The point angle of the chisel and the working surface of the job
  
5. Which punch is used to locate the drill bit ?  
 A) Prick punch                              B) Dot punch  
 C) Centre punch                              D) None of the above
  
6. In the following which is not the use of try square ?  
 A) Measuring right angle  
 B) Checking squareness  
 C) Marking straight line at 90 degree against an edge  
 D) Setting work-piece at 90 degree angle
  
7. Which is the symbol conventionally used for resinoid bond ?  
 A) 'V'                              B) 'R'                              C) 'B'                              D) 'E'
  
8. Which hammer is used for hammering inside curves for bending ?  
 A) Ball-peen hammer                              B) Straight-peen hammer  
 C) Sledge hammer                              D) Cross-peen hammer









40. What is the function of lead as an alloying element ?
- A) To improve strength and toughness
  - B) To increase the elastic limit of steel
  - C) To improve machinability
  - D) To improve hardness
41. Which of the following is a part of Taly-surf ?
- A) Stylus
  - B) Motor race
  - C) Analyser
  - D) All of the above
42. Roughness value 0.2 to 0.8 microns is indicated by which symbol ?
- A) One inverted triangle
  - B) Two inverted triangles
  - C) Three inverted triangles
  - D) Four inverted triangles
43. When a circle is added to the basic symbol of two legs of unequal length inclined at approximately  $60^\circ$ , what is meant by the surface symbol indication ?
- A) Material removal by machining is required
  - B) The material removal is not permitted
  - C) Material addition is required
  - D) Any machining method can be used
44. Which of the following process give maximum surface finish ?
- A) Honing
  - B) Sand casting
  - C) Burnishing
  - D) Lapping
45. The lines or patterns on the work surface caused by the movement of the cutting tool is called
- A) Roughness
  - B) Waviness
  - C) Surface texture
  - D) Lay
46. The quantity of heat required to change unit mass of substance completely from one state in to another at constant temperature is
- A) Specific heat
  - B) Heat capacity
  - C) Latent heat
  - D) Molar specific heat



47. What is the unit of heat in SI system ?  
A) Calorie                      B) Joule                      C) Ampere                      D) Hertz
48. The mode of heat transfer which doesn't require a medium is  
A) Radiation                      B) Conduction                      C) Convection                      D) Friction
49. The SI unit of pressure is  
A) Erg                      B) Watt                      C) Pascal                      D) Newton
50. In Fahrenheit scale, the boiling point is fixed at  
A) 25°F                      B) 100°F  
C) 200°F                      D) 212°F
51. The pressure measured greater than atmospheric pressure is called  
A) Vacuum pressure                      B) Gauge pressure  
C) Absolute pressure                      D) Atmospheric pressure
52. The temperature range of oxy-acetylene flame is  
A) 1825°C to 1875°C                      B) 2400°C to 2700°C  
C) 2700°C to 2800°C                      D) 3100°C to 3300°C
53. The instrument used to measure very high temperature of furnace is  
A) Thermometer                      B) Pyrometer  
C) Barometer                      D) Technometer
54. The metal joining process in which the work-pieces are not heated is called  
A) Brazing                      B) Welding  
C) Dip brazing                      D) Soldering
55. The most active soldering flux group is  
A) Inorganic fluxes                      B) Resin fluxes  
C) Organic fluxes                      D) Both B) and C)
56. Which type of oxy-acetylene gas flame is widely used for welding mild steel material ?  
A) Oxidising flame                      B) Neutral flame  
C) Carburising flame                      D) All of the above

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57. In leftward welding technique of oxy-acetylene gas welding, the blow pipe is held at an angle between  
A)  $10^\circ$  to  $20^\circ$       B)  $30^\circ$  to  $40^\circ$       C)  $40^\circ$  to  $50^\circ$       D)  $60^\circ$  to  $70^\circ$
58. The type of AC arc welding transformer is  
A) Step up transformer      B) Step down transformer  
C) Auto transformer      D) Power transformer
59. Hydrochloric acid is used as flux for soldering which material ?  
A) Steel      B) Brass      C) Zinc      D) Lead
60. Which among the following is not a method of Brazing ?  
A) Electroslag Brazing      B) Induction Brazing  
C) Furnace Brazing      D) Torch Brazing
61. Which of the following statements is/are correct about pattern making in casting ?  
i. Wood is the most common material for making patterns for castings.  
ii. When a metal pattern is cast itself using a wooden pattern, then the wooden pattern is called a dummy pattern.  
iii. A good pattern is one which can be easily worked, shaped and joined and should be light in weight.  
iv. Plastics are not used as pattern material for casting.  
A) Only ii and iii      B) Only i and iv      C) Only i, ii and iii      D) Only i and iii
62. Arrange the below stages of casting as per their order of manufacturing sequence.  
a. Testing and inspection  
b. Melting and casting  
c. Moulding and core making  
d. Fettling  
e. Pattern making  
A) e – d – c – b – a  
B) a – e – c – b – d  
C) e – c – b – d – a  
D) c – d – b – e – a

A

63. Match List – I with List – II below :

**List – I**

- P. Lost wax process
- Q. Centrifugal casting
- R. Permanent mould casting
- S. Plaster mould casting

**List – II**

- a. Die casting
- b. Investment casting
- c. Plaster of Paris
- d. Rotating mould

- |    | <b>P</b> | <b>Q</b> | <b>R</b> | <b>S</b> |
|----|----------|----------|----------|----------|
| A) | c        | d        | b        | a        |
| B) | b        | a        | d        | c        |
| C) | b        | d        | a        | c        |
| D) | d        | c        | b        | a        |

64. Which of the following statements is/are false about sand casting ?

- i. The intermediate mould section between cope and drag is known as cheek.
- ii. Cope refers to the lower half containing the bottom half of the pattern.
- iii. Drag refers to the upper half containing the top half of the pattern.
- iv. The proper design of tapered sprue is necessary to avoid aspiration effect.

- A) i and iv only
- B) ii and iii only
- C) i, ii and iii only
- D) none of these

65. Which statement is true about hot chamber die casting ?

- A) In hot chamber die casting, the melting unit constitutes an integral part of the process.
- B) In hot chamber die casting, the mould is submerged in the molten metal.
- C) In hot chamber die casting, the entire machine is heated.
- D) In hot chamber die casting, the molten metal is brought and poured into the die casting machine with the help of ladles.

66. Which statement is false about centrifugal casting ?

- A) Centrifugal casting methods are classified as true-centrifugal casting, semi-centrifugal casting and centrifuged casting.
- B) They have more or less a symmetrical configuration on their outer contour.
- C) To form the internal shape; pressure is generally obtained by compressed air or hydraulically.
- D) The use of gates, feeders and cores is eliminated, making the method less expensive.

67. Which among the following is a limitation of sand casting ?  
A) Economical for low-volume production  
B) Extreme complexity is possible  
C) Most direct route from pattern to casting  
D) The product gives a rough surface
68. Pump is used for increase the pressure in  
A) Pipe lines                      B) Section pipe                      C) Vent pipe                      D) Hume pipe
69. Select the Reciprocating pumps are following  
A) Simple hand operated                      B) Single acting  
C) A) and B)                      D) Centrifugal mono block
70. Compressed air pump can lift water from a depth of \_\_\_\_\_ meter.  
A) 50                      B) 100                      C) 130                      D) 150
71. Priming is a process of filling up water in the  
A) Casing                      B) Suction pipe  
C) Casing and suction pipe                      D) None of these
72. What are the main components of a centrifugal pump ?  
A) Impeller                      B) Prime mover  
C) Delivery pipe                      D) A), B) and C)
73. In a vernier caliper, movable jaws are the parts of which unit ?  
A) Fixed jaw                      B) Vernier slide  
C) Beam                      D) Main scale
74. In which part of micrometer one end forms measuring face and the other end is threaded and the tapered nose is fitted on it ?  
A) Ratchet stop                      B) Barrel                      C) Spindle                      D) Thimble
75. Which instrument is used to measure sizes from the lower plane with the help of an offset scriber ?  
A) Vernier height gauge                      B) Vernier scale  
C) Vernier caliper                      D) Depth micrometer

76. What is the least count of depth micrometer ?  
 A) 0.02 mm                      B) 0.001 mm                      C) 0.01 mm                      D) 0.1 mm
77. Which instrument is used to measure the diameter of holes and the distance between internal parallel surfaces like slots ?  
 A) Depth micrometer    B) Inside micrometer  
 C) Depth bar    D) Vernier caliper
78. In which instrument the distance or the measurements are read from LCD/LED display ?  
 A) Digital caliper              B) Depth gauge              C) Vernier caliper              D) Dial caliper
79. In a vernier caliper, the main scale divisions (9 mm) are divided into 10 equal parts in the vernier scale. What is the least count of this vernier caliper ? Here one main scale division is (1 mm).  
 A) 0.02 mm                      B) 0.1 mm                      C) 0.01 mm                      D) 0.001 mm
80. Which device is fitted on micrometers to ensure uniform pressure between the measuring faces of the micrometer while measuring ?  
 A) Anvil                              B) Spindle                              C) Ratchet stop                      D) Barrel
81. Which is the personal safety ?  
 A) Keep the machine clean    B) Concentrate on your work  
 C) Keep the gang way and floor clean                              D) Sweep away the metal cuttings
82. Which is the immediate life saving procedure ?  
 A) First aid    B) Call a doctor  
 C) Intensive care    D) Medical treatment
83. What 'A' denotes in ABC of 'First aid' ?  
 A) Air way    B) Accident  
 C) Absent mind    D) Avoid accident
84. Which of the following activity to be performed for better up keep of working environment ?  
 A) Crack practical jokes while on work  
 B) Cleaning the shop floor  
 C) Leave the machines which is in motions  
 D) Do not use adequate light in the workshop

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85. What is the shape of warning signs ?  
A) Circular  
B) Triangular  
C) Square of oblong  
D) Square
86. What is the ratio of 4 kg to 800 grams ?  
A) 5 : 1  
B) 4 : 8  
C) 8 : 4  
D) 2 : 4
87. How many millimetres are there in 12 inch ?  
A) 30.48 mm  
B) 304.8 mm  
C) 3.048 mm  
D) 40.48 mm
88. Divide :  $\frac{20}{31} \div \frac{15}{62}$ .  
A)  $2\frac{4}{3}$   
B)  $2\frac{3}{2}$   
C)  $2\frac{1}{3}$   
D)  $2\frac{2}{3}$
89. What is the percentage of copper in the casting if the weight of copper is 42.3 kg and weight of tin is 2.7 kg ?  
A) Cu 98%  
B) Cu 96%  
C) Cu 94%  
D) Cu 92%
90. What is the length of copper wire, if the copper wire weights 8 kg, density of copper is  $8.9 \text{ g/cm}^3$  and cross-sectional area is  $0.636 \text{ cm}^2$  ?  
A) 1400.10 cm  
B) 1300.10 cm  
C) 1313.33 cm  
D) 1413.33 cm
91. Two turners need three days to produce 20 pieces. How long does it takes for 6 turners to produce 30 such pieces ?  
A) 2 days  
B) 2.5 days  
C) 1.5 days  
D) 2.25 days
92. A cylindrical tank 2 m diameter  $\times$  3.5 m deep is filled with petrol. Find the weight of petrol in tonnes, assume density of petrol is  $720 \text{ kg/m}^3$ .  
A) 7900.8 Tonnes  
B) 7912.8 Tonnes  
C) 7952.8 Tonnes  
D) 7940.8 Tonnes
93. The lower limit of a dimension, stated as 23H7 in a drawing is  
A) 23.70  
B) 22.70  
C) 23.00  
D) 22.30

A

94. If a shaft size  $38^{+0.03}_{-0.01}$  mm mates with a hole of size  $38^{+0.02}_{-0.01}$  mm, the maximum interference in the assembly is
- A) 0.05                      B) 0.04                      C) 0.02                      D) 0.01
95. Find the maximum clearance in mm if a hole of size  $27^{+0.00}_{+0.02}$  mm is assembled with a shaft of  $27^{-0.005}_{-0.025}$  mm size.
- A) 0.02 mm                      B) 0.025 mm                      C) 0.040 mm                      D) 0.045 mm
96. A basic hole means
- A) Upper deviation is zero                      B) Lower deviation is zero
- C) Both A) and B)                      D) None of the above
97. The relation between mating parts in an assembly is termed as
- A) Link                      B) Joints
- C) Fits                      D) Mechanism
98. The difference between the size of manufactured product and the corresponding nominal size is termed as
- A) Allowance                      B) Tolerance
- C) Actual deviation                      D) Minimum deviation
99. Which of the following statements is correct regarding “Minimum Clearance” ?
- A) Difference between maximum size of hole and minimum size of shaft.
- B) Difference between maximum size of hole and maximum size of shaft.
- C) Difference between minimum size of hole and minimum size of shaft.
- D) Difference between minimum size of hole and maximum size of shaft.
100. If the allowance of 0.03 mm for clearance is given and the shaft diameter is 18 mm, find the design size.
- A) 18.03 mm                      B) 17.97 mm                      C) 17.03 mm                      D) 18.97 mm

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Space for Rough Work

