

068/2019

Question Booklet  
Alpha Code

A

Question Booklet  
Serial Number

Total Number of Questions : 100

Time : 75 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 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.



**068/2019**

1. In high carbon steel, carbon contain :  
(A) Below 0.25%      (B) 0.25 to 0.8%      (C) 0.8 to 1.5%      (D) 1.5 to 2.5%
  
2. Which has the highest percentage of iron ?  
(A) Magnetite      (B) Hematite      (C) Limonite      (D) Iron pyrite
  
3. Hot working of metal does not :  
(A) Eliminate porosity      (B) Achieve close tolerance  
(C) Improve mechanical properties      (D) Refine grain structure
  
4. An alloy of solder contains :  
(A) Tin and Copper      (B) Tin and Lead  
(C) Lead and Copper      (D) None of these
  
5. Lip angle of twist drill for mild steel should be :  
(A) 108°      (B) 118°      (C) 128°      (D) 126°
  
6. Forging shop tool used for mainly squaring, sizing, heading, bending and forming operations is called :  
(A) Flatter      (B) Fuller      (C) Swage      (D) Swage block
  
7. Galvanizing is generally done on :  
(A) Cast iron      (B) Stainless steel  
(C) Low carbon steel      (D) Non-ferrous metal
  
8. Tool used for finishing corners in shouldered work :  
(A) Chisel      (B) Swage      (C) Set hammer      (D) Drift

**A**

**3**

**{P.T.O.}**

9. Which of the following is a permanent fastening ?  
(A) Rivets                      (B) Bolts                      (C) Screw                      (D) Keys
10. Flux is used for brazing :  
(A) Ammonium chloride                      (B) Zinc chloride  
(C) Rosin                      (D) Borax
11. An allen bolt is :  
(A) Self locking bolt                      (B) Provided with hexagonal depression in head  
(C) Same as stud                      (D) Used in high speed components
12. Which of the following is **not** a forging operation ?  
(A) Extrusion                      (B) Fullering                      (C) Swaging                      (D) Edging
13. Cupola used to produce :  
(A) Pig iron                      (B) Wrought iron                      (C) Cast iron                      (D) Carbon free
14. The function of coke in a blast furnace is to :  
(A) Production of heat                      (B) Act as a reducing agent  
(C) Act as a spacer in bosh region                      (D) All of the above
15. The included angle in Acme thread is :  
(A)  $60^\circ$                       (B)  $55^\circ$                       (C)  $46^\circ$                       (D)  $29^\circ$
16. An alloy of Nickel and Copper is called :  
(A) Monel                      (B) Gun metal                      (C) Muntz metal                      (D) German silver
17. Which of the following contains the least percentage of carbon ?  
(A) Pig iron                      (B) Wrought iron                      (C) Cast iron                      (D) Malleable iron
18. The unit of mass in SI units is :  
(A) Kilogram                      (B) Gram                      (C) Tonne                      (D) Quintal

19. The distance between the centre of two consecutive rivets in the same row is called :  
(A) Lead                      (B) Lap                      (C) Pitch                      (D) Clearance
20. Tensile test is used for :  
(A) Ductile material                      (B) Hard material  
(C) Brittle material                      (D) None of these
21. The property of a material which returns to its original position after removal of load is called :  
(A) Plasticity                      (B) Elasticity                      (C) Ductility                      (D) Malleability
22. Pre-heating is essential for welding :  
(A) Cast iron                      (B) High speed steel  
(C) Mild steel                      (D) None of these
23. The process extensively used for making bolts and nuts is :  
(A) Cold peening      (B) Hot piercing      (C) Extrusion                      (D) Cold heading
24. Forging temperature of plain carbon steel is :  
(A) 700°C                      (B) 600°C                      (C) 900°C                      (D) 1300°C
25. The process which improves the machinability of steels, but lower the hardness and tensile strength is :  
(A) Spheroidising                      (B) Normalizing  
(C) Full annealing                      (D) Process annealing
26. The object of caulking in a riveted joint is to make the joint :  
(A) Free from corrosion                      (B) Leak-proof  
(C) Free from stresses                      (D) Stronger in tension

27. A small selected portion of the job can be hardened by :  
(A) Flame and induction hardening (B) Pack hardening  
(C) Cyaniding (D) Nitriding
28. Coining is the operation of :  
(A) Cold forging (B) Hot forging (C) Cold extrusion (D) Piercing
29. Which of the following is a direct compression process ?  
(A) Bending (B) Extrusion (C) Stretch forming (D) Forging
30. Percentage of Silver in German Silver :  
(A) 5% (B) 10% (C) 25% (D) None of these
31. Chief source of Sulphur in the blast furnace charge is :  
(A) Iron ore (B) Coke (C) Flux (D) Sinter
32. Mild steel belongs to the following category :  
(A) Medium carbon steel (B) High carbon steel  
(C) Low carbon steel (D) Alloy steel
33. Hardness of a material determines, the resistance of materials to :  
(A) Scratching (B) Wear and indentation  
(C) Machinability (D) All of the above
34. Upsetting is the process of :  
(A) Bending (B) Forging (C) Extrusion (D) Rolling
35. Main constituents of blast furnace slag are :  
(A)  $\text{SiO}_2$ ,  $\text{FeO}$ ,  $\text{CaO}$  (B)  $\text{SiO}_2$ ,  $\text{CaO}$ ,  $\text{Al}_2\text{O}_3$   
(C)  $\text{CaO}$ ,  $\text{MgO}$ ,  $\text{SiO}_2$  (D)  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{MgO}$

36. Corrosion resistance of steel is increased by adding :
- (A) Chromium and Nickel                      (B) Aluminium and Zinc  
(C) Tungsten and Sulphur                    (D) All of the above
37. A steel containing 0.8% carbon is known as :
- (A) Eutectoid steel                              (B) Hyper-eutectoid steel  
(C) Hypo-eutectoid steel                      (D) None of these
38. Which of the following materials **cannot** be forged ?
- (A) Medium carbon steel                      (B) Mild steel  
(C) Wrought iron                                (D) Cast iron
39. Flatter is a tool used for :
- (A) Striking                                        (B) Punching  
(C) Finishing the surface                      (D) Holding the job
40. Case hardening is the only method suitable for :
- (A) High speed steel                              (B) Low carbon steel  
(C) High alloy steel                              (D) High carbon steel
41. Increase in hardness of metals due to its cold working is termed as :
- (A) Induction hardening                      (B) Age hardening  
(C) Work hardening                              (D) Flame hardening
42. Heating the steel above upper critical temperature and then cooling in air is the process of :
- (A) Annealing              (B) Normalizing              (C) Tempering              (D) Hardening
43. Melting point of pure iron is :
- (A) 1259°C              (B) 1379°C              (C) 1539°C              (D) 1739°C

44. Tool steel should be first hardened and then :  
(A) Tempered (B) Normalized (C) Annealed (D) Cooled
45. Cold chisels are made by the process of :  
(A) Piercing (B) Drawing (C) Forging (D) Rolling
46. Material which is best suited for forge welding is :  
(A) Cast iron (B) Stainless steel  
(C) High speed steel (D) Wrought iron
47. Difference between upper and lower limit of a dimension is called :  
(A) Nominal size (B) Basic size (C) Actual size (D) Tolerance
48. Tool used for necking down operations :  
(A) Fuller (B) Flatter (C) Swage (D) Chisel
49. Hacksaw blade is specified by its :  
(A) Material (B) Length (C) Width (D) Number of teeth
50. Melting point of Tin is :  
(A) 116°C (B) 232°C (C) 685°C (D) 850°C
51. Another name of odd-leg caliper is :  
(A) Inside caliper (B) Outside caliper  
(C) Spring caliper (D) Hermaphrodite caliper
52. The material generally used for aircraft components is :  
(A) Mild steel (B) High speed steel  
(C) Stainless steel (D) Aluminium



53. Which is an ore of Zinc ?  
(A) Calamine (B) Galena (C) Azurite (D) Cerussite
54. Forging operations, the cross-sectional area of bar is increased due to its reduction in length :  
(A) Swaging (B) Upsetting (C) Drawing (D) Edging
55. Low carbon steel can be hardened by :  
(A) Heating and quenching in water (B) Heating and quenching in oil  
(C) Carburising and cyaniding (D) None of these
56. Hot tear is a :  
(A) Heat treatment process (B) Fabrication process  
(C) Casting defect (D) None of the above
57. Acetylene gas is generated from :  
(A) Calcium (B) Calcium carbide  
(C) Carbon (D) Calcium carbonate
58. Gun metal is an alloy of :  
(A) Nickel, Tin and Copper (B) Copper, Tin and Zinc  
(C) Copper, Phosphorus and Nickel (D) Manganese, Phosphorus and Nickel
59. A feeler gauge is used for checking :  
(A) Screw pitch (B) Radius  
(C) Surface roughness (D) Thickness of clearance
60. Cross-section of chisel are generally :  
(A) Square (B) Circular (C) Hexagonal (D) Octagonal
61. Which of the following gases are used in TIG welding ?  
(A) Helium and Neon (B) Hydrogen and Oxygen  
(C) Argon and Helium (D) Carbon dioxide and Hydrogen

62. Which of the part of an anvil is used for making hole on metal ?  
(A) Face                      (B) Beak                      (C) Tail                      (D) Punch hole
63. Maximum hardenability of steel depends on its :  
(A) Chemical composition                      (B) Carbon content  
(C) Grain size                      (D) All of the above
64. Which of the following material has the highest hardness ?  
(A) Cast iron                      (B) Steel                      (C) Silicon carbide                      (D) Copper
65. Given the following is **not** a heat treatment process :  
(A) Parkerising                      (B) Cyaniding                      (C) Austempering                      (D) Martempering
66. The material for drawn into wire should have high :  
(A) Stiffness                      (B) Toughness                      (C) Ductility                      (D) Hardness
67. Copper melts at :  
(A) 812°C                      (B) 918°C                      (C) 1083°C                      (D) 1145°C
68. The cutting angle of chisel for cutting mild steel should be :  
(A) 28°                      (B) 30°                      (C) 55°                      (D) 60°
69. Case hardening **cannot** be done by :  
(A) Electroplating                      (B) Cyaniding  
(C) Induction hardening                      (D) Nitriding
70. Chisels used for cutting keyways is :  
(A) Flat chisel                      (B) Round nose chisel  
(C) Cape chisel                      (D) None of these

71. The instrument used to measure thickness of parts, internal and external diameter of shaft and depth of holes, is :
- (A) Inside micrometer (B) Outside micrometer  
(C) Depth gauge (D) Vernier caliper
72. Forging is accomplished in drop forging by dropping the :
- (A) Hammer at high velocity  
(B) Weight on hammer to produce the required impact  
(C) Die with hammer at high velocity  
(D) Work piece at high velocity
73. A cold chisel is made of :
- (A) High carbon steel (B) Mild steel  
(C) High speed steel (D) Cast iron
74. Hammer is made by :
- (A) Cast iron (B) Wrought iron (C) Mild steel (D) High carbon steel
75. The material for construction of bearing is :
- (A) Mild steel (B) Babbit metal (C) Pig iron (D) Steel
76. Wrought iron is :
- (A) Hard (B) High in strength  
(C) Highly resistant to corrosion (D) Least resistant to corrosion
77. Pure iron is the structure of :
- (A) Ferrite (B) Pearlite (C) Austenite (D) Cementite
78. Ability of material absorbing large amount of energy before fracture is known as :
- (A) Ductility (B) Toughness (C) Plasticity (D) Hardness

79. Young's modulus may be defined as the ratio of :
- (A) Linear stress to lateral strain      (B) Lateral strain to linear strain  
(C) Linear stress to linear strain      (D) Shear stress to shear strain
80. The tool used for internal thread making :
- (A) Tap                      (B) Dies                      (C) Punch                      (D) Drift
81. Mild steel is used for making :
- (A) Die block              (B) Hammer              (C) Hacksaw blade      (D) Channels
82. Machining properties of steel is improved by adding :
- (A) Sulphur, Lead and Phosphorus      (B) Silicon, Aluminium and Titanium  
(C) Vanadium, Aluminium              (D) Chromium, Nickel
83. Steel possess the maximum ductility by :
- (A) Quenching      (B) Annealing      (C) Carburising      (D) Hardening
84. The railway carriage couplings have :
- (A) Square thread      (B) Acme thread      (C) Knuckle thread      (D) Buttress thread
85. The test specimen is measured in the creep test :
- (A) Deformation in volume              (B) Deformation in length  
(C) Deformation in width              (D) None of these
86. Blast furnace produces :
- (A) Wrought iron      (B) Cast iron              (C) Pig iron              (D) Steel
87. The process in which carbon and nitrogen both are absorbed by the metal surface to get hardened is :
- (A) Carburising                              (B) Cyaniding  
(C) Flame hardening                      (D) Induction hardening

88. Age hardening is connected with the :  
(A) Gun metal      (B) Stainless steel      (C) Duralumin      (D) Babbit metal
89. Swage block is made of :  
(A) High speed steel      (B) Tool steel  
(C) High carbon steel      (D) Cast iron
90. The usual value of the helix angle of drill is :  
(A) 10°      (B) 20°      (C) 30°      (D) 45°
91. Point angle of centre punch is :  
(A) 30°      (B) 45°      (C) 55°      (D) 90°
92. Name of the cutting tool fixed on an anvil :  
(A) Hot set      (B) Hardie      (C) Cold set      (D) Chisel
93. The minimum amount of carbon in gray cast iron is :  
(A) 0.5%      (B) 0.8%      (C) 1.5%      (D) 2.5%
94. Steel pipes are normally manufactured by :  
(A) Extrusion      (B) Cold working  
(C) Forging      (D) Electroforming
95. Drills are usually made of :  
(A) Mild steel      (B) High speed steel  
(C) Alloy steel      (D) High carbon steel
96. Chisel used for removing surplus metal in cotter ways and slots is called :  
(A) Flat chisel      (B) Half round chisel  
(C) Cross-cut chisel      (D) Side chisel

97. Bronze is an alloy of Copper and :  
(A) Lead                      (B) Zinc                      (C) Tin                      (D) Nickel
98. Depth of hardness of steel is increased by addition of :  
(A) Nickel                      (B) Chromium                      (C) Tungsten                      (D) Vanadium
99. The compression test is carried on :  
(A) Ductile material                      (B) Brittle material  
(C) Malleable material                      (D) Plastic material
100. In engineering drawing, visible outlines are represented by :  
(A) Continuous thick                      (B) Continuous thin  
(C) Dashed thin                      (D) Dashed thick

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**SPACE FOR ROUGH WORK**

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