

136/23

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. Which operation is to remove burrs from a plate after cutting ?
A) Brushing B) Filing C) Scraping D) Chiseling
2. The reading accuracy of steel rule is
A) 0.1 mm B) 0.5 mm C) 0.25 mm D) 0.2 mm
3. The weight of an engineer's hammer used for marking purposes, is
A) 500 gms B) 150 gms C) 250 gms D) 200 gms
4. What happened if bench vice is over tightened ?
A) Box nut damaged B) Spindle damaged
C) Work bench damaged D) Work pieces damaged
5. The angle of the prick punch is
A) 45° B) 60° C) 30° D) 90°
6. Which of the following metal is used for making nozzle in gas welding ?
A) Brass B) Bronze C) Copper D) Silver
7. What is the purpose of copper coating on mild steel filler rod used in gas welding ?
A) Rust proof B) Water proof
C) Moisture proof D) Increased filler dia
8. Oxygen becomes liquefied at which temperature in normal atmospheric pressure ?
A) 0°C B) - 218.4°C C) - 4°C D) - 182.9°C
9. What is the base for selecting the nozzle size for gas welding of a pipe ?
A) Groove angle B) Welding position
C) Pipe wall thickness D) Diameter of pipe
10. What flux is to be used for gas welding stainless steel plates ?
A) Borox flux
B) Anti - Borox
C) Cryolite and barium chloride
D) Zinc chloride and potassium dichromate paste

11. Which filler rod to be used for gas welding aluminium ?
A) Silicon-brass
B) Silicon-manganese
C) Copper-Silver alloy
D) Pure aluminium, 5% silicon aluminium alloy
12. Which material is used in manufacture gas cylinder ?
A) Forged steel
B) Nickel steel
C) Stainless steel
D) Solid Drawn steel
13. What is the purpose of cleaning of sheets before doing gas welding ?
A) To avoid overlap
B) To avoid porosity
C) To avoid undercut
D) To control distortion
14. Which type welding uses a non-ferrous filler with melting point above 450°, than base metal ?
A) Brazing
B) Soldering
C) Arc welding
D) Gas welding
15. Which metal can be cut by oxy-acetylene gas cutting process ?
A) Aluminium
B) Cast iron
C) Mild steel
D) Stainless steel
16. Which is the hottest point in a oxy-acetylene flame ?
A) 2000 – 2200 C
B) 2500 – 2700 C
C) 2700 – 3000 C
D) 3000 – 3200 C
17. What is the use of oxidising flame ?
A) Suitable for cast iron welding
B) Suitable for brass welding
C) Suitable for mild steel welding
D) Suitable for stellite, pipe welding
18. What are the defects in generated acetylene gas ?
A) Oxygen, hydrogen and carbon
B) Carbon monoxide unburnt ash
C) Hydrogen, dust particles, ash
D) Hydrogen, lime dust, ammonia and water vapour

19. Which material is stored at the bottom compartment of acetylene gas purifier ?
- A) Filter wool
B) Baffle plate
C) Pumice stone
D) Purifying chemicals
20. Which safety device is fitted to avoid explosion of acetylene generator due to high pressure ?
- A) Cylinder valve
B) Acetylene generator outlet pipe
C) Hydraulic back pressure valve
D) Baffle plate
21. How the construction of a nozzle for gouging is identified ?
- A) Straight nozzle with single preheating hole
B) Bent nozzle with sectorial preheating holes
C) Fully bent nozzle with circular preheating holes
D) Slightly bent nozzle with circular preheating six holes
22. When does the defect of gouging on cutting face takes place ?
- A) Too much pre-heating
B) Too slow cutting speed
C) Excessive speed, inadequate pre-heating
D) Too much cutting oxygen pressure
23. What is the temperature in the weld area plasma arc welding process ?
- A) 20,000 C to 30,000 C
B) 30,000 C to 35,000 C
C) 15,000 C to 20,000 C
D) 35,000 C to 40,000 C
24. Which electrode is used in plasma arc welding ?
- A) Cast iron
B) Mild steel
C) Tungsten
D) Stainless steel
25. Which process cuts the stainless steel, carbon steel with the help of high jet velocity ?
- A) Plasma arc process
B) Micro plasma cutting process
C) Key hole plasma process
D) Non-transferred plasma arc

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26. Which type of welding is to be used to make joint of thick pipes of rails ?
- A) Thermit welding
 - B) Pressure Thermit welding
 - C) Fusion Thermit welding
 - D) None of the above
27. Which gas is suitable for welding of carbon steel and titanium by plasma arc welding process ?
- A) Helium
 - B) Co_2
 - C) Argon
 - D) Neon
28. Which test indicates the hardness of a metal ?
- A) Brinell test
 - B) Tensile test
 - C) Charpy izod test
 - D) Ultrasonic inspection
29. Which type of rivets are suitable for boiler shells ?
- A) Pan
 - B) Flat
 - C) Snap
 - D) Mushroom
30. Which welding process enables to weld dissimilar metals ?
- A) Brazing
 - B) Seam welding
 - C) Spot welding
 - D) Fusion welding
31. Which heat treatment process causes the reduction of brittleness in the steel ?
- A) By annealing
 - B) By hardening
 - C) By tempering
 - D) By normalising
32. What is the process of heating steel to specific temperature and cooling suddenly ?
- A) Annealing
 - B) Hardening
 - C) Tempering
 - D) Quenching
33. What is the name of short weld made prior to the welding to hold the plates in perfect alignment ?
- A) Bead weld
 - B) Tack weld
 - C) String bead
 - D) Strong weld

A

34. Which one of the below is to control distortion ?
- A) Use large size electrode
 - B) Use small size electrode
 - C) Use few passes with large electrode
 - D) Use more passes with small electrode
35. What is the percentage of carbon in medium carbon steel ?
- A) 0.05% to 0.30%
 - B) 0.05% to 0.8%
 - C) 0.30% to 0.6%
 - D) 0.6% to 1.2%
36. In which type of arc welding machine, the parts of the commutators are fixed ?
- A) Motor generator set
 - B) Rectifier set
 - C) Transformer set
 - D) Engine driven set
37. What should be the shade number of the filter glass to be used for arc welding with 150 amps current ?
- A) Shade number-6
 - B) Shade number-8
 - C) Shade number-11
 - D) Shade number-22
38. What are the effect of arc length used for the long arc ?
- A) Unstable arc
 - B) Correct metal deposition
 - C) Even burning of electrode
 - D) Wastage due to melting of electrode
39. Which one of the following metals cannot be welded by AC welding machine ?
- A) Brass
 - B) Cast iron
 - C) Mild steel
 - D) High carbon steel
40. The capacity of an arc welding machine is indicated by
- A) Input current in amps
 - B) Closed circuit voltage
 - C) Output current in amps
 - D) Open circuit voltage

41. How much gap is maintained between the grinding wheel and the work rest on a pedestal grinder ?
- A) 4 to 5 mm
 - B) 3 to 4 mm
 - C) 2 to 3 mm
 - D) 1 to 2 mm
42. What is the angle of electrode while welding in vertical position ?
- A) 60° to 70°
 - B) 70° to 80°
 - C) 80° to 90°
 - D) 90° to 100°
43. Which element is present in contact electrode in large proportion ?
- A) Carbon
 - B) Silicon
 - C) Manganese
 - D) Iron
44. What is the fusion zone ?
- A) Fused depth
 - B) Lack of fusion
 - C) Edge of the joint
 - D) Surface of the joint
45. What is polarity ?
- A) Circuit of current
 - B) Direction of current
 - C) Open Circuit of current
 - D) Opposite Direction of current
46. Which type of arc produce humming sound ?
- A) Long arc length
 - B) Short arc length
 - C) Normal arc length
 - D) Too long arc length
47. How do you name the depression formed at the end of the weld ?
- A) Crack
 - B) Crater
 - C) Pin hole
 - D) Blow hole
48. What is the pre heating temperature of cast iron ?
- A) 200 to 310°C
 - B) 250 to 350°C
 - C) 300 to 350°C
 - D) 350 to 450°C

49. What is the grade of hacksaw blades with pitch 0.8 mm ?
- A) Fine
 - B) Medium
 - C) Coarse
 - D) Rough
50. How is the electrode size identified ?
- A) Length of electrode
 - B) Thickness of flux coated
 - C) Diameter (overall) of electrode
 - D) Diameter of inner core wire
51. Which type of tungsten electrode is suitable for welding of stainless steel by tig process with DC ?
- A) Pure tungsten electrode
 - B) Cerium tungsten electrode
 - C) Thoriated tungsten electrode
 - D) Zirconium tungsten electrode
52. Inert gases which one produce the deepest penetration in tig welding process ?
- A) Oxygen
 - B) CO₂
 - C) Helium
 - D) Argon
53. Helium gas is best suited for welding thicker metals because
- A) high gas volume
 - B) high arc voltage
 - C) low gas volume
 - D) low arc voltage
54. Helium is _____ times lighter than Argon.
- A) six
 - B) eight
 - C) ten
 - D) twelve
55. What is the usual torch angle tilt on either side of vertical in GMAW ?
- A) 10° – 20°
 - B) 20° – 25°
 - C) 25° – 30°
 - D) 30° – 35°

56. Which metal transfer process in GMAW produces strong weld with least spatter ?
- A) spray transfer
 - B) globular transfer
 - C) dip transfer
 - D) pulsed transfer
57. What ampere range required for setting 1.2 mm filler wire for welding mild steel in MIG/MAG welding ?
- A) 50 – 100 amps
 - B) 70 – 120 amps
 - C) 90 – 150 amps
 - D) 100 – 225 amps
58. Which metal is welded with self-shielded type FCAW ?
- A) low alloy steel
 - B) stainless steel
 - C) carbon steel
 - D) different metal and different position
59. What is the trouble shooting to wire wrapping on drive rolls of wire feeder in GMAW ?
- A) adjust drive rolls pressure
 - B) replace drive rolls and guide
 - C) check drive rolls align properly
 - D) replace the drive motor
60. What defect will occur in the weld metal, if the arc voltage and travel speed is low in MIG/MAG welding ?
- A) blow hole
 - B) undercut
 - C) wire struck
 - D) weld overlap
61. Which welding process is effective for nickel and titanium ?
- A) arc welding
 - B) tig welding
 - C) gas welding
 - D) mig welding
62. What is the defect while TIG welding if the current is too low ?
- A) crack
 - B) porosity
 - C) undercut
 - D) lack of fusion

63. What is the melting point of tungsten ?
- A) 3410°C
 - B) 2000°C
 - C) 5404°C
 - D) 1404°C
64. What is the bore diameter of ceramic nozzle to avoid porosity while doing TIG welding ?
- A) small sized
 - B) large sized
 - C) correct sized
 - D) too small sized
65. What is the function of a little hydrogen added to argon for welding of stainless steel in GTAW process ?
- A) improves heat
 - B) improves heat transfer
 - C) improves good welding
 - D) improves metal property
66. What is the defect caused by high current in TIG welding ?
- A) crack
 - B) porosity
 - C) undercut
 - D) lack of penetration
67. Which gas is used as inert gas in GTAW for increased speed ?
- A) oxygen
 - B) helium
 - C) acetylene
 - D) hydrogen
68. What is the reason for arc wanders while in AC TIG welding ?
- A) improper tungsten size
 - B) improper shielding gas
 - C) improper cup size
 - D) touching tungsten to weld puddle
69. What is the name of the part of TIG torch for holding tungsten electrode ?
- A) collet
 - B) ceramic nozzle
 - C) adaptor
 - D) electrode cap

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70. Which gas is inactive or deficient is active chemical properties in TIG welding ?

- A) argon
- B) hydrogen
- C) oxygen
- D) acetylene

71. What is percentage of deposition efficiency in FCAW process ?

- A) 93% to 97%
- B) 80% to 86%
- C) 70% to 76%
- D) 60% to 67%

72. Which gas/mixture is likely to reduce the spatter loss in FCAW ?

- A) argon and CO₂ mixed
- B) argon and helium mixed
- C) CO₂ and helium mixed
- D) only CO₂ gas

73. What is the difficulty in starting of arc in GMAW ?

- A) wrong polarity
- B) unsteady hand
- C) work piece dirty
- D) excess of voltage

74. What is the range of electrode for MAG/CO₂ welding ?

- A) 0.8 mm to 1.6 mm
- B) 0.7 mm to 1.3 mm
- C) 0.6 mm to 0.9 mm
- D) 0.5 mm to 0.7 mm

75. In electron beam welding, electrons given off by the filament are accelerated and focused by

- A) Electron gun
- B) Electron beam
- C) Vacuum pump
- D) Atmosphere

76. At the junction of the two sheets, the duration of current flow that results in the formation of a molten nugget is known as

- A) Squeeze time
- B) Hold time
- C) Weld time
- D) Off time

77. The purpose of hard facing is to provide resistance to

- A) Wear or abrasion
- B) Cavitation
- C) Galling
- D) All the above

A

78. To minimise the depression in spot welding use
- A) Water cooling on the electrode
 - B) Large sized electrode tip
 - C) Air cooling on electrode tip
 - D) All the above
79. The metal that cannot be joined by projection welding
- A) Aluminium
 - B) Copper
 - C) Stainless steel
 - D) Mild steel
80. Metal that is suitable to weld in forge welding
- A) Wrought iron
 - B) Stainless steel
 - C) Copper
 - D) Brass
81. An example of the type of surfacing
- A) Layering
 - B) Cladding
 - C) Brazing
 - D) None of the above
82. Which type of resistance welding process can join irregular faced metals without edge preparation ?
- A) Spot welding
 - B) Flash butt welding
 - C) Seam welding
 - D) None of the above
83. The type of welding that is used to weld thicker metal in a single pass
- A) Gas metal arc welding
 - B) Electro slag welding
 - C) Electric arc welding
 - D) Gas tungsten arc welding
84. Which of the following metals can be welded in the underwater welding process ?
- A) Alloy steel
 - B) Aluminium
 - C) Stainless steel
 - D) Mild steel
85. In which type of welding cast iron, lead and zinc alloys cannot be welded ?
- A) Flash butt welding
 - B) Projection welding
 - C) Upset welding
 - D) Spot welding
86. Which type of power source is used for underwater welding ?
- A) Plasma
 - B) Alternating current
 - C) Direct current
 - D) Oxy-fuel gas

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87. Is work not a Part of an electrical circuit in this welding ?
A) TIG
B) MIG
C) Atomic hydrogen
D) Plasma arc welding
88. The method of pipe welding chosen depends on
A) Availability of welding method
B) Skill of the welder
C) The size of the pipe and its application
D) None of the above
89. Which one of the following pipe welding position stands for 45° inclined position welding ?
A) 1G
B) 2G
C) 5G
D) 6G
90. The weld symbol is on both sides of the reference line it means
A) Weld is made on both side of the joint
B) Weld is made on the upper side
C) Weld is made on the opposite side
D) None of the above
91. In fillet welding, the leg length indicated by the letter is
A) z
B) a
C) w
D) l
92. In the 5G position
A) Pipe axis is perpendicular to the ground
B) Pipe axis is parallel to the ground
C) Pipe axis is inclined to both horizontal and vertical plane
D) None of the above
93. Which Country's standard code is DIN ?
A) India
B) USA
C) Japan
D) Germany
94. Identify the NDT that is used to detect surface defects as well as subsurface defects in ferrous metals.
A) Liquid penetrant test
B) Ultrasonic test
C) Gamma ray test
D) Magnetic particle test

A

95. Fabrication costs involve the cost of
- A) Material handling, cutting and machining
 - B) Electrodes, power consumed and welding labour
 - C) Preparation, welding and finishing
 - D) Machining, grinding and painting
96. The test is used to identify the ductility of the weld metal
- A) Free bend test
 - B) Longitudinal bend test
 - C) Guided bend test
 - D) Side bend test
97. The time a welder spends in operations other than welding is known as
- A) Weld time
 - B) Arc time
 - C) Work time
 - D) Down time
98. The test is used to identify surface defects in ferrous, non-ferrous and non-metallic materials
- A) Magnetic particle test
 - B) Stethoscopic test
 - C) Fluorescent penetrant test
 - D) Liquid penetrant test
99. In the AWS codification of electrodes, the 3rd digit indicates
- A) Type of flux coating
 - B) Tensile strength
 - C) Electrode strength
 - D) Welding position
100. The major advantage of this test is its portability
- A) Gamma ray test
 - B) X-ray test
 - C) Ultrasonic test
 - D) Fatigue test
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Space for Rough Work

