

157/2025

Question Booklet
Alpha Code

A

Question Booklet
Serial Number

Total No. of questions : 100

Time : 1 Hour 30 Minutes

Maximum : 100 Marks

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.

157/2025

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. Which of the following term do not indicate the grade of the file?

- | | |
|----------------|---------------|
| (A) Bastard | (B) First cut |
| (C) Second cut | (D) Smooth |

2. Match the following tools and their use :

Tools	Uses
(p) Hand shield	(1) To remove slag
(q) Chipping hammer	(2) To check squareness
(r) Tongs	(3) To hold hot jobs
(s) Try square	(4) To protect eyes from uv rays
(A) p-1, q-2, r-3, s-4	(B) p-2, q-1, r-3, s-4
(C) p-4, q-1, r-2, s-3	(D) p-4, q-1, r-3, s-2

3. Cross section of chisel is :

- | | |
|------------|----------------|
| (A) Flat | (B) Half round |
| (C) Square | (D) Hexagonal |

4. How much oxygen is required to oxidise one kilogram of iron?

- | | |
|----------------|-----------------|
| (A) 200 liters | (B) 300 liters |
| (C) 500 liters | (D) 1000 liters |

5. Which fuel gas is used for under water cutting?

- | | |
|--------------|---------------|
| (A) Methane | (B) Acetylene |
| (C) Hydrogen | (D) LPG |

6. Which one of the test is conducted by without electricity supply?

- | | |
|---------------------|--------------------------------------|
| (A) X-ray test | (B) Gamma ray test |
| (C) Ultrasonic test | (D) Electro - magnetic particle test |

7. A test is conducted to know the tensile strength and ductility of weld is :

- | | |
|------------------|----------------------|
| (A) Fatigue test | (B) Tensile test |
| (C) Impact test | (D) Guided bend test |

8. Based on the properties of different metals they are used for various applications which metal does not allow X-rays to pass through?
- (A) Copper (B) Zinc
(C) Lead (D) Tin
9. Stethoscope test comes in :
- (A) Destructive test (B) Semi-destructive test
(C) Special non-destructive test (D) Common non-destructive test
10. Define the WPS :
- (A) Welding Parallel System (B) Welding Position System
(C) Welding Practice System (D) Welding Procedure Specification
11. The velocity of plasma arc cutting stream is :
- (A) 500 m/sec (B) 600 m/sec
(C) 700 m/sec (D) 800 m/sec
12. The non-consumable electrode material used in plasma arc cutting other than compressed air is :
- (A) 1% Thoriated tungsten (B) 2% Thoriated tungsten
(C) 6% Thoriated tungsten (D) 10% Thoriated tungsten
13. In the following statement which one is the advantages of hard facing?
- (A) Increased labour cost
(B) Increased idle time of plant
(C) Shorter life of wearing parts
(D) Use of reconditioned wornout parts
14. Which defects are prevented by controlling of heat input technique?
- (A) Crack and spatter (B) Porosity and crack
(C) Crack and distortion (D) Porosity and distortion
15. Post heating is done after welding, the reason for post heating is to :
- (A) Reduce rate of cooling (B) Controls rate of cooling
(C) Controls rate of heating (D) Increase rate of heating
16. Which of the following element is used to prevent weld decay of stainless steel?
- (A) Columbium (B) Magnesium
(C) Chromium (D) Thorium

17. After the welding of aluminium fuel tanks, the fluxes are usually removed by :
(A) using a solution of nitric acid and hydrofluoric acid
(B) using caustic soda
(C) using acid chromate bath
(D) using sulphuric acid
18. Stellite type filler metal is commonly used for :
(A) Braze welding
(B) Welding aluminium castings
(C) Hard facing of metallic components
(D) Welding of corrosion resisting steels
19. Which of the following filler rod material is suitable for the welding of wrought iron?
(A) Pure aluminium
(B) Copper coated mild steel
(C) High carbon steel
(D) Nickel steel
20. The normal temperature range of oxy-coal gas-flame is :
(A) 3100 – 3300°C
(B) 1800 – 2200°C
(C) 2600°C – 3000°C
(D) 750°C – 1200°C
21. When austenetic stainless steel is heated during gas welding, the chromium and carbon will combine to form :
(A) Chromium carbide
(B) Chromium acetate
(C) Chromium trioxide
(D) Chromium oxide
22. The melting point of aluminium oxide is :
(A) 2200°C
(B) 660°C
(C) 1930°C
(D) 940°C
23. Acid chromate bath is recommended for the removal of flux residue in :
(A) Copper alloys
(B) Magnesium alloys
(C) Stainless steel
(D) Aluminium alloys
24. Oxygen cylinders are periodically cleaned by using :
(A) Brine solution
(B) Caustic solution
(C) Isopropyl alcohol
(D) Chlorine dioxide
25. The third compartment of acetylene gas purifier contains :
(A) Pumice stone
(B) Caustic solution
(C) Filter wool
(D) Charcoal

26. The acetylene gas cylinder is made from :
(A) Forged aluminium alloy (B) Seamless drawn steel tube
(C) Copper alloy (D) Magnesium alloy
27. The colour coding usually given to Argon-cylinder is :
(A) Red (B) Blue
(C) Grey (D) Green
28. Oxygen gas cylinders are usually tested with a water pressure of :
(A) 150 bar (B) 80 bar
(C) 225 bar (D) 30 bar
29. Which flame is commonly used for stellite?
(A) Neutral flame (B) Carburising flame
(C) Oxidising flame (D) All of these
30. The colour coding usually given to Hydrogen cylinder is :
(A) Green (B) Grey
(C) Red (D) Blue
31. In DC welding machine $\frac{1}{3}$ heat liberated in which terminal :
(A) Negative terminal (B) Positive terminal
(C) Both terminal (D) Input terminal
32. In which polarity low hydrogen electrodes are used :
(A) DC positive (B) DC negative
(C) DC Positive or negative (D) AC only
33. The type of electrode which helps to get a weld without cracks :
(A) Low hydrogen electrodes
(B) Deep penetration electrodes
(C) Stainless steel electrodes
(D) Iron powder electrodes
34. The Method of welding heavy thick plates in vertical position is :
(A) Submerged arc welding (B) Thermit welding
(C) Plasma arc welding (D) Electro slag welding

35. Changing the position of the work on the welding table is the method of :
(A) Reducing the effective shrinkage force
(B) Balancing the shrinkage force with another shrinkage force
(C) Making the shrinkage force to reduce distortion
(D) Control the arc blow
36. The substance which contains the flux prevent porosity and make the weld stronger :
(A) Binding substance (B) Fluxing substance
(C) Gas forming substance (D) Deoxidizers
37. The distance between the junction of the metals and the point where the weld metal touches the base metal 'toe' is called:
(A) Weld junction (B) Throat thickness
(C) Leg length (D) Weld face
38. In this type of welding an arc is formed between a continuous, automatically fed, metallic consumable electrode and the welding job under a thick pool of molten flux :
(A) Submerged arc welding (B) Plasma arc welding
(C) Electro slag welding (D) MIG welding
39. The distance between the junction of the metals and the midpoint on the line joining the two toes is known as :
(A) Root gap (B) Root face
(C) Weld junction (D) Throat thickness
40. Supplementary symbols on elementary symbols indicate the :
(A) Reference line (B) Dimension and other details
(C) Type of weld surface (D) Specification
41. Which type of wire brush is used for cleaning nonferrous metals?
(A) Plastic wire brush (B) Carbon steel wire brush
(C) Coir wire brush (D) Stainless steel wire brush
42. In a welding rectifier cell which acts as a cathode :
(A) Cadmium, bismuth and tin alloy film (B) Steel or aluminium plate
(C) Nickel or bismuth layer (D) Selenium or silicon layer
43. A small weld deposited on the root side of butt or corner joint before welding :
(A) Run (B) Backing run
(C) Sealing run (D) Root

44. Identify one of the methods to balance the shrinkage force with another shrinkage force :
(A) Use of deep fillet weld (B) Welding from centre
(C) Pre bending (D) Divergence allowance
45. In this process the arc is formed between a tungsten electrode in an atmosphere of hydrogen, nitrogen and argon gas :
(A) Plasma arc welding (B) Gas metal arc welding
(C) Gas tungsten arc welding (D) Atomic hydrogen arc welding
46. The surface formed by squaring off the root edge of the fusion face to avoid a sharp edge at the root :
(A) Root side (B) Root gap
(C) Fusion zone (D) Root face
47. Standard length of an arc welding electrode is :
(A) 250 mm or 300 mm (B) 350 mm or 450 mm
(C) 300 mm or 350 mm (D) 350 mm only
48. Which arc length is used for restarting the weld?
(A) Long arc (B) Short arc
(C) Normal arc (D) Medium arc
49. As per IS : 814-1991, electrode coding, the letter 'K' indicates :
(A) Radiographic quality (B) Effective electrode efficiency
(C) Hydrogen controlled electrode (D) Type of covering
50. In which polarity is cellulosic type electrodes are used?
(A) DC Negative (B) AC
(C) DC Positive (D) Any polarity
51. What is the gun angle used in forehand or backhand welding technique in GMAW?
(A) 10 - 15 degree (B) 5 - 10 degree
(C) 15 - 20 degree (D) 20 - 30 degree
52. What is the colour code used to identify a CO₂ Cylinder?
(A) Maroon colour (B) Black colour
(C) Peacock Blue colour (D) Black body with white neck
53. What is the main function of a gas diffuser in a MIG torch?
(A) To hold the welding tip in place
(B) To make sure the shielding gas is delivered evenly and correctly to the nozzle
(C) To feed the welding wire smoothly to tip
(D) To control the welding current and voltage

54. What is the voltage range for Globular Transfer in GMAW?
- (A) 16-22 V (B) 28-32 V
(C) 23-27 V (D) 19-27 V
55. In DIP transfer during MIG welding, what happens when the molten wire touches the weld puddle?
- (A) The arc become stronger and continuously burning steadily
(B) The circuit is shorted, the arc is extinguished and the metal drop is transferred
(C) The shielding gas flow increases to prevent oxidation
(D) The electrode wire melts without contacting the base metal
56. Which of the following could be a cause if it is difficult to start an arc and the arc is unstable during GMAW?
- (A) Excessive amperage for torch
(B) Incorrect liner or contact tip
(C) Restriction in liner or torch
(D) Wrong polarity or poor working piece connection
57. Which gas can be used to minimize spatters loss in GMAW?
- (A) Carbon dioxide (B) Hydrogen
(C) Helium (D) Oxygen
58. In GMAW process the CO₂ is filled in the cylinder in the form of?
- (A) Gas (B) Liquid
(C) Solid (D) None of these
59. Which type of drive roller is used for Flux core arc welding?
- (A) V rollers (B) U rollers
(C) Both (A) and (B) (D) V curved
60. Which is the shielding gas mixture suitable for welding stainless steel using spray transfer in GMAW?
- (A) Argon with 1-2% Oxygen (B) Argon with 75% Helium
(C) Argon with 25% CO₂ (D) Helium with 5% CO₂
61. The distance between the end of the contact tube and the tip of the electrode in CO₂ welding is known as :
- (A) Stick out (B) Burn through
(C) Feed rate (D) Burn back

- 62.** State the value of metal deposition efficiency achieved in the FCAW :
- (A) 86-90% (B) 80-86%
(C) 93-97% (D) 78-89%
- 63.** Which defects is likely to be caused if gas supply is independent in GMAW?
- (A) Burn through (B) Porosity
(C) Lack of penetration (D) Excessive penetration
- 64.** In CO₂ welding, when the welding current is 300-500 A what is the quantity of gas flow that should be set in the shielding?
- (A) 15-18 L/min (B) 10-15 L/min
(C) 8-10 L/min (D) 20-25 L/min
- 65.** In ER 70 S of GMAW, electrode specification as per AWS what does 70 represents :
- (A) Hardness strength (B) Tensile strength
(C) Bend strength (D) None of these
- 66.** What is also referred as a GTAW?
- (A) Tig welding (B) Mig welding
(C) Stud welding (D) Gas welding
- 67.** What is the non-consumable electrode of high melting point used in Tig welding?
- (A) Carbon electrode (B) Copper electrode
(C) Tungsten electrode (D) Aluminium electrode
- 68.** What is the angle of electrode tip by setting DCEN for stainless steel welding by Tig welding?
- (A) 50° (B) 40°
(C) 45° (D) 60°
- 69.** Which is the welding process that maintains electric arc between non consumable tungsten electrode and the base metal?
- (A) SAW (B) MMAW
(C) MIG (D) TIG
- 70.** What is the name of the defect in which the weld metal did not melt with base metal in Tig process?
- (A) Porosity (B) Lack of penetration
(C) Lack of fusion (D) Under cut

71. What is the purpose of inert gas used in Tig welding?
- (A) Contamination in the weld metal
 - (B) To protect the molten metal from the atmospheric contamination
 - (C) To stabilise the arc
 - (D) To get more spatters
72. What is the process of replacing the air in a pipe with argon gas that will not react with the root of the weld?
- (A) Pouring
 - (B) Purging
 - (C) Prefilling
 - (D) Pool weld
73. What is the name of the part of Tig torch for holding tungsten electrode?
- (A) Collet
 - (B) Adapter
 - (C) Ceramic nozzle
 - (D) Electrode cap
74. What is the purpose of high frequency unit in Tig welding?
- (A) To produce AC
 - (B) To change AC to DC
 - (C) To produce power supply
 - (D) To initiate the arc without touching the electrode on the base metal
75. What is the device used to show the volume of inert gas allowed to go to the welding torch in Tig welding?
- (A) Flow meter
 - (B) CO₂ Regulator
 - (C) Pressure meter
 - (D) Argon regulator
76. Which type 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
77. Which electrode is used to produce the arc in GTAW process?
- (A) Mild steel electrode
 - (B) Cast iron electrode
 - (C) Tungsten electrode
 - (D) Stainless steel electrode
78. Which will not be present on the weld bead due to use of shielding gas in Tig welding?
- (A) Slag
 - (B) Overlap
 - (C) Under cut
 - (D) Penetration
79. What is the defect caused by high current in tig welding?
- (A) Crack
 - (B) Porosity
 - (C) Undercut
 - (D) Lack of penetration

80. Why argon gas is used in welding of stainless steel welding in Tig welding process?
 (A) Inert gas protects the weld (B) It helps in melting electrode
 (C) It prevents porosity (D) It is cheap
81. Which welding machine is to be used for welding aluminium by Tig welding process?
 (A) AC welding machine (B) DC welding machine
 (C) AC/DC Transformer (D) DC Transformer
82. What is defect by tig welding if the current is too low?
 (A) Crack (B) Porosity
 (C) Undercut (D) Lack of fusion
83. What is the right about DCRP electrode Tig welding?
 (A) Improper tungsten size (B) Improper shielding gas flow
 (C) Improperly prepared tungsten (D) Weld circuit polarity is incorrect
84. Which process can easily weld thin metal?
 (A) Mig welding (B) Tig welding
 (C) Submerged arc welding (D) MMAW
85. How is the inert gas directed to flow over weld pool in Tig welding?
 (A) Through copper nozzle (B) Through brass nozzle
 (C) Through ceramic nozzle (D) Through metal nozzle
86. Which of the welding process that uses the arc between a bare metal electrode and weld pool?
 (A) Thermit welding (B) Submerged arc welding
 (C) Laser beam welding (D) SMAW
87. Which of the following statement/s are true related to submerged arc welding?
 (i) In automatic submerged arc welding arc voltage, arc length only controlled in automatically
 (ii) In automatic submerged arc welding arc voltage, arc length, and speed of travel, electrode feed controlled automatically
 (iii) In semi automatic submerged arc welding arc voltage, arc length, and speed of travel, electrode feed controlled manually
 (iv) In semi automatic submerged arc welding arc length, flux feeding and electrode feed are automatic but speed of travel is controlled by operator
 (A) Statement (i), (ii), (iii) are correct
 (B) Statement (iv) only correct
 (C) Statement (ii), (iii), (iv) are correct
 (D) Statement (ii), (iv) only correct

88. In thermit welding thermit mixture consisting of :
- (A) About 5 parts of potassium and 8 parts of iron oxide
 - (B) About 5 parts of iron and 8 parts of iron oxide
 - (C) About 5 parts of aluminium and 8 parts of iron oxide
 - (D) About 5 parts of aluminium and 8 parts of sulphur oxide
89. Which of the following welding is commonly used to weld railway tracks?
- (A) Thermit welding
 - (B) Submerged arc welding
 - (C) Laser beam welding
 - (D) SMAW
90. Which of the following statement is true related to thermit welding?
- (A) Thermit welding usually involves chemical reaction and it is endothermic
 - (B) Thermit welding usually involves chemical reaction and it is exothermic
 - (C) Thermit welding usually involves mechanical reaction and it is exothermic
 - (D) Thermit welding usually involves chemical reaction and it is decomposition
91. Electro slag welding is generally done in :
- (A) Horizontal position
 - (B) Vertical position
 - (C) Over head position
 - (D) Flat position
92. Which of the following statements is/are correct related to Electro slag welding :
- (i) Electro slag welding is generally done in vertical position and can be only weld very thin plates
 - (ii) Electro slag welding is generally done in horizontal position and can be only weld very thin plates
 - (iii) Electro slag welding is generally done in vertical position and can be only weld heavy plates
 - (iv) Electro slag welding is generally done in overhead position and can be only weld heavy plates
- (A) Statement (i), (ii) only correct
 - (B) Statement (i), (ii), (iii) only correct
 - (C) Statement (iii) only correct
 - (D) Statement (i) only correct
93. LASER stands for :
- (A) Light Attitude by Stimulated Emission of Radiation
 - (B) Light Amplification by Stimulated Erosion of Radiation
 - (C) Light Amplification by Stimulated Emission of Radiation
 - (D) Light Amplification by Stimulated Emission of Rotation

94. Which welding process requires vacuum for welding?
- (A) Laser beam welding (B) Plasma arc welding
(C) Electron beam welding (D) TIG welding
95. In Electron beam welding the following action takes place
- (A) Kinetic energy of the high speed electrons is converted into heat
(B) Potential energy of the high speed electrons is converted into heat
(C) Kinetic energy of the high speed electrons is converted into current
(D) Kinetic energy of the high speed electrons is converted into voltage
96. In resistance welding heat (H) produced at the junction is calculated by (where I = current, R = resistance, T = time) :
- (A) $H = R * T/I$ (B) $H = I * R * T$
(C) $H = I^2 * R * T$ (D) $H = I * T/R$
97. The welding process that uses roller electrode is :
- (A) Thermit welding (B) Projection welding
(C) Spot welding (D) Seam welding
98. Which of the following welding process is not a resistance welding?
- (A) Electron beam welding (B) Projection welding
(C) Spot welding (D) Seam welding
99. The welded part of the spot welding is known as :
- (A) Weld nugget (B) Weld bracket
(C) Weld gadget (D) Weld bucket
100. What kind of filler metal is used in friction welding?
- (A) Wired type (B) Powder type
(C) Copper (D) No filler metal
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SPACE FOR ROUGH WORK

SPACE FOR ROUGH WORK