

111/2022

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. The standard length of the commonly used hacksaw blade is :
(A) 100 mm (B) 150 mm
(C) 200 mm (D) 250 mm
2. To what angle the center punch is ground?
(A) 30° (B) 40°
(C) 50° (D) 90°
3. The accuracy of measurement with a steel rule is :
(A) 1.0 mm (B) 0.5 mm
(C) 0.2 mm (D) 0.05 mm
4. For gas cutting of a 8 mm thick plate, how much should be the cutting oxygen pressure?
(A) 1.0 kg/cm² (B) 1.4 kg/cm²
(C) 2.1 kg/cm² (D) 0.8 kg/cm²
5. While gas cutting, the nozzle should be :
(A) Touches the work (B) 2 mm away from work
(C) 5 mm away from work (D) 10 mm away from work
6. What type of flame do you set to weld gray cast iron?
(A) Neutral Flame (B) Carburising Flame
(C) Oxidizing Flame (D) Air Flame
7. Oxygen gas will change into liquid condition at :
(A) -195.8 °C (B) -182.9 °C
(C) -181.7 °C (D) -172.8 °C
8. Which oxy-acetylene flame has an excess of fuel gas?
(A) Oxidizing (B) Neutral
(C) Carburizing (D) None of these

A

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[P.T.O.]

9. Why an oxidizing flame is most suitable to weld brass and bronze?
- (A) Brass and bronze are having higher melting points
 - (B) To retain the colour of brass and bronze
 - (C) It avoids evaporation of zinc
 - (D) To speed up the welding
10. What is the preheating temperature of cast iron welding?
- (A) 150°C to 300°C
 - (B) 170°C to 310°C
 - (C) 300°C to 350°C
 - (D) 200°C to 310°C
11. 1 kg of calcium carbide generate ————— liter of acetylene gas :
- (A) 157 liter
 - (B) 247 liter
 - (C) 375 liter
 - (D) 447 liter
12. What is the storage medium used to store acetylene gas in the cylinder at high pressure?
- (A) Water
 - (B) Acetone
 - (C) Kerosene
 - (D) Petroleum
13. Which one of the following gases is supporter of combustion?
- (A) Oxygen
 - (B) Acetylene
 - (C) Nitrogen
 - (D) CO₂
14. Which stage of regulator is needed for frequent torch adjustment?
- (A) Single stage
 - (B) Double stage
 - (C) CO₂ gas regulator
 - (D) Hydrogen gas regulator
15. Which type of blow pipe can be used in both low pressure and high pressure?
- (A) High pressure blow pipe
 - (B) Low pressure blow pipe
 - (C) Non injector blow pipe
 - (D) Equal pressure of blow pipe
16. In gas welding the angle of torch to the work in rightward welding technique is :
- (A) 30° – 40°
 - (B) 40° – 50°
 - (C) 50° – 60°
 - (D) 60° – 70°

17. Which one is a fusion welding?
- (A) Spot welding (B) Seam welding
(C) Butt welding (D) Gas welding
18. Which gas flame combination is suitable to weld both ferrous and non-ferrous metals?
- (A) Oxy Acetylene (B) Air-Acetylene
(C) Oxy-hydrogen (D) Oxy-LPG
19. The chief alloying elements of stainless steel are :
- (A) Chromium and Nickel (B) Chromium
(C) Nickel and Vanadium (D) Nickel and Tungsten
20. The divergence allowance required for gas welding a 300 mm long copper butt joint is :
- (A) 1 mm to 2 mm (B) 3 mm to 4 mm
(C) 4.5 mm to 5 mm (D) 2 to 2.5 mm
21. One of the advantages of the submerged arc welding process is :
- (A) high deposition rate and speed
(B) the joint will be totally defect free
(C) thin sheets can also be welded
(D) welding of no-ferrous metals can also be done
22. The current set to weld a 8 mm thick M-S butt joint using a 4 mm size electrode by submerged arc welding process is :
- (A) 520 Amp (B) 620 Amp
(C) 720 Amp (D) 800 Amp
23. Which one of the position used for electroslog welding?
- (A) Downhand (B) Horizontal
(C) Vertical (D) Overhead
24. The reel of the submerged arc welding electrode is available upto the diameter of :
- (A) 10 to 15 mm (B) 8 to 10 mm
(C) 2 to 8 mm (D) 2 to 12 mm

25. In the electroslag welding find the temperature of inside under the surface?
(A) 1800°C (B) 1650°C
(C) 1930°C (D) 1900°C
26. The reaction which takes place in thermit welding is :
(A) Exothermic (B) Endothermic
(C) Combustion (D) Decomposition
27. What is the temperature of thermit welding?
(A) 2000°C (B) 2500°C
(C) 2760°C (D) 3000°C
28. In friction welding, the metal at the interface when joining occurs, is in :
(A) Elastic State (B) Plastic State
(C) Liquid State (D) Intercritical State
29. Which welding process is performed in a vacuum without a shielding gas?
(A) Plasma arc welding (B) Laser beam
(C) Electron beam welding (D) SAW
30. By which process good penetration will occur while welding titanium?
(A) Arc welding (B) Electron beam welding
(C) Electro slag welding (D) Gas welding
31. What is the shape of seam welding electrode?
(A) Pointed (B) Rectangular
(C) Roller (D) Flat
32. During the resistance welding, heat produced is proportional to :
(A) Voltage (B) Current
(C) Volt-ampere (D) Temperature
33. Which statement is used for submerged arc welding?
(A) Welding is done in vacuum (B) Less metal deposition rate
(C) Bare wire electrode is used (D) Welding can be done in all positions

34. Which operating variable in submerged arc welding controls the arc length?
(A) Welding speed (B) Welding voltage
(C) Welding current (D) Electrode wire extension
35. Flux used in submerged arc welding is in the form of :
(A) Liquid (B) Solid rod
(C) Granular (D) Solid tube
36. The sensitivity of a radiograph is assessed :
(A) by using a densitometer
(B) by using an image quality indicator (IQI)
(C) from the KVA used
(D) from the source to work standoff distance used
37. Which destructive test preparation the weld bead cutting by saw of 1.5 mm to 2 mm depth?
(A) Nick break test (B) Tree bend test
(C) Tensile test (D) Fillet fracture test
38. In which test the welded joint is subjected to push and pull forces alternatively for a long period until the joint fails?
(A) Tensile test (B) Fatigue test
(C) Hardness test (D) Impact test
39. The ductility of weld metal is measured by the :
(A) Tensile test (B) Bend test
(C) Impact test (D) Fatigue test
40. What is the full form of WPS in welding?
(A) Welder Performance Specification
(B) Welder Performance Qualification
(C) Welding Procedure Qualification
(D) Welder Practice Space
41. Which process is used to cut stainless steel metal?
(A) Plasma arc cutting process (B) Oxy-acetylene
(C) Oxy-propane (D) It depends upon the thickness

42. Which is the operation to relieve residual stresses from the welding point?
(A) Drilling (B) Peening
(C) Preheating (D) Postheating
43. Which method is suitable for surfacing the metal part and for high quality of weld and high deposition rate?
(A) Oxy-Acetylene method (B) MMAW
(C) MIG Welding (D) SAW
44. What is the purpose of metal build up on the worn out metal parts?
(A) To change its dimensions
(B) To reduce its shape and properties
(C) To make them good as new and obtain require properties
(D) To get brightness
45. Which electrode is used in plasma arc welding?
(A) Cast iron (B) Mild steel
(C) Tungsten (D) Stainless steel
46. Which type of transformer is used in arc welding?
(A) Step up (B) Step down
(C) Laminated core (D) Phase shifting
47. Welding transformers are equipped with condensers to improve :
(A) Current (B) Voltage
(C) Resistance (D) Power factor
48. What is defined as the vertical position of groove welding?
(A) 1 G (B) 2 G
(C) 3 G (D) 6 G
49. Which of the accessories should be worn during overhead welding?
(A) Helmet (B) Sunglass
(C) Safety belt (D) Apron
50. Which type of polarity is used in aluminium welding?
(A) Self polarity (B) Moderate polarity
(C) Reverse polarity (D) Straight polarity

51. Which type of electrode produces a short arc length?
(A) Heavy coated electrodes (B) Light-coated electrodes
(C) Medium coated electrodes (D) Super heavy coated electrodes
52. What is the conversion function of a rectifier?
(A) AC to AC (B) DC to DC
(C) AC to DC (D) DC to AC
53. Which is used for arc welding if there is no electric power supply?
(A) Rectifier set (B) Welding Transformer set
(C) Motor generator set (D) Engine generator set
54. Which type of arc produces a humming sound?
(A) Long arc length (B) Short arc length
(C) Too short arc length (D) Too long arc length
55. The amount of time during which the transformer will be used for welding under normal loading conditions is known as :
(A) Hold time (B) Operating time
(C) Weld time (D) Duty cycle
56. What is the purpose of fixing run-on, run-off plates in arc welding?
(A) Control arc blow (B) Control porosity
(C) Control distortion (D) Control defects
57. What happens if the root gap is lesser than one-sixth of plate thickness?
(A) More chances of distortion
(B) More penetration will result
(C) Likely defects like blowhole, porosity
(D) Base metal not fused till the bottom of joint
58. What is the indication of the wrong polarity in DC welding?
(A) Electrode becomes red hot
(B) Electrode will freeze with the job
(C) Excess spatters and poor penetration
(D) It will produce the edge of plates melted off

59. Which metal in the welding process is subjected to the “Weld decay” defect?
(A) Aluminium (B) Copper
(C) Tin (D) Stainless steel
60. What does the third digit of AWS codification in EB 5426 HJX represent?
(A) Type of current (B) Type of covering
(C) Type of tensile strength (D) Type of welding position
61. What is the cause of hairline separation in the bead in arc welding?
(A) Fast cooling (B) Slow cooling
(C) Long arc length (D) Wrong selection
62. Which type of arc length produces poor penetration?
(A) Long arc length (B) Short arc length
(C) Normal arc length (D) Too long arc
63. What procedure is to be followed for welding pipes under the 6G position?
(A) Pipe not rotated weld vertical
(B) Rotate pipe and deposit weld vertical
(C) Pipe not rotated weld deposit horizontal
(D) Pipe not rotated and pipe axis 45° angle deposit weld flat, vertical
64. What is the effect of expansion and contraction due to heat in welding?
(A) Peening (B) Arc blow
(C) Distortion (D) Metal force
65. What is the welding defect in base metal gets melted and a groove formed along the toe of the weld?
(A) Undercut (B) Blow holes
(C) Reinforcement (D) Lack of penetration
66. What type of lens shade is to be fixed in the helmet while doing MIG welding?
(A) A # 09 (B) A # 10
(C) A # 11 (D) A # 12
67. Which shielding gas is used in MIG welding?
(A) Argon (B) Argon + 20% CO₂
(C) Argon + 1% oxygen (D) Argon + 10% hydrogen

68. How many types of metal transfer in GMAW/CO₂ welding process?
 (A) One (B) Two
 (C) Three (D) Four
69. Which is an important link between the power source and the welding gun in MIG welding?
 (A) Wire feed unit (B) Electrode holder
 (C) Nozzle (D) Earth clamp
70. 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°
71. What is the solution if burn back occurs due to irregular wire feeding in the GMAW process?
 (A) Cut out kink wire (B) Replace of spool
 (C) Cut the kink wire and replace spool (D) Adjusted to the kinked wire again
72. Which type of core wire is suitable for welding carbon steel, alloy steel, and stainless steel under FCAW?
 (A) Flux-cored electrode (B) Gas shield flux wire
 (C) Used flux core and gas shielded (D) Flux is external and shielded
73. Why the argon and CO₂ mixture is used in FCAW?
 (A) Smooth spray transfer, with minimum slag
 (B) Smooth globular transfer
 (C) Smooth pulsed transfer
 (D) Smooth dip transfer
74. Which electrode wire is more suitable for carbon steel fabrication in the GMAW process?
 (A) 70S – 6 (B) 70T – 2
 (C) 70S – 2 (D) 70S – 3
75. Which type of electrode provides protective slag in flux-cored arc welding?
 (A) Tubular cored flux electrode (B) External cored electrode
 (C) Additional cored flux electrode (D) Shielding gas type only

76. Gas diffusers of MIG/MAG welding are made by :
- (A) Glass (B) Mild steel
(C) Brass (D) Copper
77. What gas combination will reduce spatter defect and improve arc stability in a MIG/MAG welding process?
- (A) CO₂/Neon (B) Argon/CO₂
(C) Helium/ CO₂ (D) Argon/ CO₂/O₂
78. What is the name of the welding defect, with weld metal contracting during welding process?
- (A) Distortion (B) Lack of fusion
(C) Lack of penetration (D) Porosity
79. What is the defect in a weld joint, in which the weld metal melts through base metal resulting in holes?
- (A) Undercut (B) Overlap
(C) Burn through (D) Distortion
80. What is the effect of MIG/MAG welding for a short stick out distance?
- (A) Porosity in weldment (B) Arc blow in weldment
(C) Less spatter deposit in nozzle (D) More spatter deposit in nozzle
81. What is the non-consumable electrode of a high melting point used in TIG welding?
- (A) Carbon electrode (B) Copper electrode
(C) Tungsten electrode (D) Aluminium
82. What is the full form of GTAW?
- (A) Groove Tungsten arc Welding (B) Grip Tungsten arc Welding
(C) Gas Tungsten arc Welding (D) Galvanized Tungsten arc Welding
83. Which welding process is effective for nickel and titanium?
- (A) Arc welding (B) TIG welding
(C) Gas welding (D) MIG welding
84. To identify the argon gas cylinder it is painted with :
- (A) Grey color (B) Peacock blue color
(C) Black (D) Scarlet

85. 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) Activate the molten metal
 - (D) To get more spatters
86. Why Zirconium tungsten electrodes are used in AC applications?
- (A) High resistance to contamination
 - (B) Low resistance to contamination
 - (C) High resistance to porosity
 - (D) None of these
87. How heat affected zone is covered and protected from atmospheric contaminations in GTAW?
- (A) Argon gas
 - (B) Nitrogen gas
 - (C) Oxygen gas
 - (D) Butane gas
88. How is the inert gas directed to flow over the weld pool, in TIG welding?
- (A) Through the copper nozzle
 - (B) Through the brass nozzle
 - (C) Through the ceramic nozzle
 - (D) Through the metal nozzle
89. What is the purpose of the H.F. unit in TIG welding?
- (A) To produce the 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
90. What is the device used to show the volume of the inert gas allowed to go to the welding torch in TIG welding?
- (A) Flow meter
 - (B) CO₂ regulator
 - (C) Pressure meter
 - (D) Argon regulator
91. 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) Pre-setting
 - (D) Post-setting
92. Which will not be present on the weld bead due to the use of shielding gas in TIG welding process?
- (A) Slag
 - (B) Overlap
 - (C) Undercut
 - (D) Blow hole

93. Which welding machine is to be used for welding aluminium by the TIG welding process?
- (A) AC welding machine (B) DC welding machine
(C) AC DC transformer (D) DC transformer
94. Name the device which allows the welder to use a longer electrode extension than with a standard nozzle in TIG welding :
- (A) Electrode cap (B) Ceramic nozzle
(C) Collet (D) Gas lens
95. Which gas is used as an inert gas in GTAW for increased speed?
- (A) Oxygen (B) Helium
(C) Acetylene (D) Argon
96. What is the name of the part of the TIG torch for holding the tungsten electrode?
- (A) Collet (B) Adaptor
(C) Ceramic nozzle (D) Electrode cap
97. Which type of cooling system is used in heavy-duty welding operations?
- (A) Air cooled (B) Oil cooled
(C) Gas cooled (D) Water cooled
98. Which type of tungsten electrode is suitable for welding SS by TIG process with DC?
- (A) Pure tungsten electrode (B) Cerium tungsten electrode
(C) Thoriated tungsten electrode (D) Zirconium tungsten electrode
99. What is the defect while TIG welding if the current is too low?
- (A) Crack (B) Porosity
(C) Undercut (D) Lack of fusion
100. What is the cause for poor weld bead color in TIG welding process?
- (A) Too much arc length
(B) Excessive heating in torch
(C) Tungsten melting into the weld puddle
(D) Contaminated or improper filler metal

SPACE FOR ROUGH WORK

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