

**065/2024**

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. Which of the following statement is/are correct about physical properties of materials?
- (i) Physical properties are employed to describe a material under condition in which external forces are not concerned.  
(ii) Physical properties of a material are those as described in the field of physics
- (A) Only (i) (B) Only (ii)  
(C) All of the above (i) and (ii) (D) Both (i) and (ii) are not correct
2. Which of the following statement is/are correct about mechanical properties of metals?
- (i) Mechanical properties include those characteristics which are describe its behaviour under the action of external forces.  
(ii) Mechanical properties can be determined by conducting experimental tests on the material specimen.  
(iii) Density is an example for mechanical properties
- (A) Only (i) (B) Only (ii)  
(C) Only (i) and (ii) (D) Only (ii) and (iii)
3. Which of the following is not a ferrous material?
- (A) Constantan (B) Steels  
(C) Cast iron (D) Stainless steel
4. Grey cast iron consists of :
- (A) 3.2 – 4.2% C (B) 0.2 – 0.6% C  
(C) 0.3 – 0.8% C (D) 2.5 – 3.8% C
5. Which of the following statement is/are correct about Chrome-Vanadium steel?
- (i) Chrome-Vanadium steel contains 0.26% C, 0.92% Cr, 0.2% V.  
(ii) Chromium and Vanadium are added to increase the hardenability.  
(iii) Used for making axles and shafts of automobiles, aeroplanes and locomotives.
- (A) Only (i) (B) All of the above (i), (ii) and (iii)  
(C) Only (i) and (ii) (D) Only (ii)

6. Which of the following statement is/are correct about melting point of a metal?
- (i) Melting point depends on the bonding forces.
  - (ii) Melting point of mild steel is 1500°C
  - (iii) Melting point of Aluminium is 650°C
- (A) Only (i) (B) Only (ii)  
(C) Only (iii) (D) All of the above (i), (ii) and (iii)
7. Which of the following metal section is specified by length \*width\* thickness and wt per kg?
- (A) Angles (B) Sheet  
(C) Round bars (D) Channels
8. Which of the following metal section is specified by width\*thickness and wt per metre length?
- (A) Round bars (B) Sheet  
(C) Flats (D) Hollow sections
9. Which of the following statement is/are correct about hot rolling?
- (i) In hot rolling lubrication is not necessary
  - (ii) In hot rolling loads are very high
  - (iii) Hot rolling provides better dimensional accuracy
- (A) Only (i) (B) Only (ii)  
(C) Only (iii) (D) All of the above (i), (ii) and (iii)
10. Which one of the following metal sections specification include web thickness?
- (A) Angles (B) Sheet  
(C) Round bars (D) Channels
11. Which of the following statement is/are correct about cold rolling?
- (i) Cold rolling provides good surface finish
  - (ii) Cold rolling provides better dimensional accuracy
- (A) Only (i) (B) Only (ii)  
(C) Both (i) and (ii) (D) None of the above

12. Which one of the following is not a specification of angle metal sections?
- (A) Thickness (B) Thickness of flange  
(C) Sectional area (D) Weight per metre
13. Which of the following statement is/are not correct about scriber?
- (i) It is made of high carbon steel and is hardened.  
(ii) The point should be ground and honed frequently for maintaining its sharpness.  
(iii) Bend point is used to drawing circles on the surface.
- (A) Only (ii) and (iii) (B) Only (ii)  
(C) All of the above (i), (ii) and (iii) (D) Only (iii)
14. Which of the following statement is/are correct in case of Hacksaw blades?
- (i) Hacksaw blades are specified by the length, pitch and type of material.  
(ii) Course pitch blades are used for cutting soft materials such as bronze, brass etc.  
(iii) Pitch size of coarse pitch blade is 0.8 mm.
- (A) Only (i) and (iii) (B) Only (i) and (ii)  
(C) Only (iii) (D) All of the above (i), (ii) and (iii)
15. Which of the following statement is/are correct about a ball pein hammer?
- (i) The wedges fix the handle in the eyehole.  
(ii) The weight of the hammer is stamped on check.  
(iii) Hammer is made of drop-forged carbon steel.
- (A) Only (i) (B) Only (iii)  
(C) Only (i) and (iii) (D) All of the above (i), (ii) and (iii)
16. Half-round nose chisels is used to :
- (A) Chip-off excess metal of welded joints and castings  
(B) Cutting key ways  
(C) Cutting oil grooves  
(D) Squaring materials at the corners

17. In a vernier caliper, 9 main scale divisions are divided into 10 equal parts in the vernier scale. Value of one main scale division is 1 mm. What is the least count of this vernier caliper?
- (A) 0.1 mm (B) 0.05 mm  
(C) 0.02 mm (D) 0.5 mm
18. Which of the following statement is/are correct about Jenny caliper?
- (i) It is used for marking lines parallel to the inside and outside edges.  
(ii) Another name of this caliper is leg and point calipers.  
(iii) Jenny caliper is used for finding the centre of round bars.
- (A) Only (i) and (iii) (B) Only (i) and (ii)  
(C) All of the above (i), (ii) and (iii) (D) Only (iii)
19. The accuracy of steel rule is :
- (A) 5 mm (B) 0.5 mm  
(C) 1 mm (D) 0.5 cm
20. What is the value of one main scale division in a vernier bevel protractor?
- (A) 1 degree (B) 5 minutes  
(C) 5 seconds (D) 1 minutes
21. What is the pitch of the spindle thread in metric outside micrometer?
- (A) 1 mm (B) 0.5 mm  
(C) 0.01 mm (D) 0.1 mm
22. Which of the following statement is/are correct about standard wire gauge?
- (i) The thickness of the sheet and diameter of wire are measured with the help of the standard wire gauge.  
(ii) Smaller gauge numbers representing small size, higher gauge number representing larger sizes.  
(iii) Wire diameter is checked by inserting the wire on the circle portion of the gauge.
- (A) Only (ii) and (iii) (B) Only (i) and (iii)  
(C) All of the above (i), (ii) and (iii) (D) Only (i)

23. The accuracy of measurement by a try square is about :
- (A) 0.002 mm per 10 mm length
  - (B) 0.02 mm per 10 mm length
  - (C) 0.05 mm per 10 mm length
  - (D) 0.005 mm per 10 mm length
24. Which of the following statement is/are correct in case of bevel protractor?
- (i) It is an indirect angular measuring instrument.
  - (ii) Angles can be measured within an accuracy of 1 degree.
  - (iii) Graduation marked from  $0^\circ$  to  $180^\circ$
- (A) Only (i) and (iii)
  - (B) Only (i) and (ii)
  - (C) Only (ii) and (iii)
  - (D) All of the above (i), (ii) and (iii)
25. Which of the following statement is/are correct about straight edge?
- (i) It is used to mark straight lines on a metal surface.
  - (ii) It can be used to check 90 degree angles.
  - (iii) It can be used to check 45 degree angles.
- (A) Only (ii) and (iii)
  - (B) Only (i) and (iii)
  - (C) All of the above (i), (ii) and (iii)
  - (D) Only (i)
26. Which of the following statement is/are correct about Half moon stake?
- (i) This stake is used when shaping and seaming funnels and tapered articles.
  - (ii) It is used for turning up flanges on metal discs.
  - (iii) It has two horns.
- (A) Only (ii) and (iii)
  - (B) Only (ii)
  - (C) All of the above (i), (ii) and (iii)
  - (D) Only (i)
27. Which of the following statement is/are correct about Trammel?
- (i) It is used for scribing circles, arcs and for transforming and stepping off distances.
  - (ii) Its another name is 'beam compass'.
  - (iii) The distance from the point to the centre of the rivet is the size of the wing compass.
- (A) Only (ii) and (iii)
  - (B) Only (i) and (iii)
  - (C) Only (i)
  - (D) All of the above (i), (ii) and (iii)

28. Which marking media is using with nitric acid?
- (A) Copper sulphated (B) Cellulose lacquer  
(C) Prussian blue (D) Marking blue
29. Which one of the following is not a part of vernier height gauge?
- (A) Beam (B) Fixed jaw  
(C) Locking screws (D) Scriber blade
30. Which of the following statement is/are correct about Radius gauge?
- (i) They are made of cast iron.  
(ii) It is used to check the radii by comparing the radius on a part with the radius of the gauges.  
(iii) The radius and fillet gauges are available in sets of several blades which fold into a holder when not in use.
- (A) Only (iii) (B) Only (ii)  
(C) Only (ii) and (iii) (D) All of the above (i), (ii) and (iii)
31. What is the purpose of vice clamp?
- (A) To hold heavy works (B) To hold a finished work  
(C) Easy removal of works (D) To hold small works
32. Which vice is used for holding small work that requires filing or drilling?
- (A) Pin vice (B) Pipe vice  
(C) Hand vice (D) Tool maker's vice
33. Which of the following statement is/are not correct in case of flat file?
- (i) They are made of cast iron.  
(ii) The edges along the width are parallel throughout the length.  
(iii) One edge is single cut whereas the other is safe edge.
- (A) Only (iii) (B) Only (ii)  
(C) Only (ii) and (iii) (D) All of the above (i), (ii) and (iii)

34. Why slight convexity is given on the face of hammer?
- (A) To prevent damage to work surface
  - (B) To avoid digging of the edge
  - (C) To allow even load on striking
  - (D) To prevent slipping
35. What is the purpose of creasing hammer?
- (A) To finish the wired edges
  - (B) Used to jump the rivet shanks and finish the rivet heads
  - (C) Used for in hollowing operation on the metal sheet
  - (D) To hammer heavy works
36. Name the defect that causes the metal chips to clog between the teeth of file?
- (A) Digging of file
  - (B) Glazing of file
  - (C) Pinning of file
  - (D) Warping of file
37. What is the name of operation by which removing the excess metal in required size from the edges of sheet to form a desired job in correct size and shape?
- (A) Piercing
  - (B) Punching
  - (C) Shearing
  - (D) Notching
38. Give the name of a power press operation in which flat components are produced from sheet metal. Here the metal cut-out is the required component and the sheet with the cut on the die is the scrap?
- (A) Blanking
  - (B) Grooving
  - (C) Shearing
  - (D) Notching
39. Which among the following power press operation is used to produce a shallow relief design on flat sheet metal components and it is mainly using for producing impressions of figures, letters or designs etc.?
- (A) Slitting
  - (B) Nibbling
  - (C) Trimming
  - (D) Embossing

40. Name the power press operation that producing circular holes in regular pattern or evenly spaced :
- (A) Piercing (B) Punching  
(C) Perforating (D) Notching
41. Name the power press operation, which is mainly using for producing ventilators in duct work, electrical panels, vehicle bodies etc. Here sheet metal is cut through part of its length and then bending the cut portion as ventilator :
- (A) Blanking (B) Slitting  
(C) Lancing (D) Nibbling
42. What is a bending operation that deforming the sheet metal at the face of a previously punched hole to accommodate the heads of screws?
- (A) Angle bending (B) Forming  
(C) Curling (D) Plunging
43. Name the bending operation in which the edge of an article is form in the shape of roll for solid wiring or hollow wiring purpose :
- (A) Angle bending (B) Forming  
(C) Curling (D) Plunging
44. What is the name of operation of cutting sheet metal in a straight line along the length?
- (A) Grooving (B) Slitting  
(C) Lancing (D) Creasing
45. What is the approximate size of blank (diameter of disc) required to make a cup, if the diameter and height of the required cup is 50 mm and 80 mm respectively?
- (A) 136 mm (B) 200 mm  
(C) 148 mm (D) 196 mm
46. What is the exact meaning of planishing?
- (A) Spinning (B) Folding  
(C) Hollowing (D) Flattening



47. Which among the following is just opposite operation of Hollowing?  
(A) Flattening (B) Folding  
(C) Rising (D) Punching
48. Which method of processing is mainly using to make a seamless object?  
(A) Spinning (B) Creasing  
(C) Grooving (D) Slitting
49. Which among the following operations is not assuming as a seam of sheet metal?  
(A) Locked grooved (B) Paned down  
(C) Pittsburgh (D) Notching
50. Among the following seams which one mainly using to join the bottom pieces and it is more leak proof also?  
(A) Grooved seam (B) Locked Grooved seam  
(C) Paned down seam (D) Knocked up seam
51. What is the process of 'drawing' with related to the power press operation?  
(A) Draw the development on flat sheet metal blanks  
(B) Producing cup shaped articles from flat sheet metal blanks  
(C) Straightening the curved or bent on sheet metal parts  
(D) Bending sheet metals to sharp angle
52. Which one of the following is not come under the category of shearing, in connection with the process of Power press?  
(A) Blanking (B) Piercing  
(C) Punching (D) Curling
53. Which type of development is mainly using to make an object like truncated cone?  
(A) Parallel line development  
(B) Radial line development  
(C) Triangulation method  
(D) Geometrical construction

54. Which type of development is mainly using to make an object like transition piece?
- (A) Parallel line development
  - (B) Radial line development
  - (C) Triangulation method
  - (D) Geometrical construction
55. Which type of development is mainly using to make an object like cylinder and its oblique?
- (A) Parallel line development
  - (B) Radial line development
  - (C) Triangulation method
  - (D) Geometrical construction
56. Which method of development is mainly using to make an object like hemispherical shape?
- (A) Parallel line development
  - (B) Radial line development
  - (C) Triangulation method
  - (D) Geometrical construction
57. Which among the following machine is generally using to do an internal Locked Grooved Seam on a cylindrical component?
- (A) Bar folder machine
  - (B) Hand groover
  - (C) Seam closing machine
  - (D) Crimping machine
58. What will be the allowance of Locked Grooved Seam, if the available width of a hand groover is 6.5 mm and sheet thickness is 0.5 mm?
- (A) 5 mm
  - (B) 4 mm
  - (C) 3 mm
  - (D) 2 mm

59. Which one of the following seam is known as Bottom double seam?
- (A) Grooved Seam (B) Locked Grooved Seam  
(C) Paned down Seam (D) Knocked up Seam
60. Which seam is generally using for duct fabrication work?
- (A) Grooved Seam (B) Locked Grooved Seam  
(C) Stake joint (D) Hammer lock Seam
61. Among the following seams, which one is similar to Pittsburgh seam and it is a role formed seam made by machine?
- (A) Sunk Lap Joint (B) Locked Grooved Seam  
(C) Stake joint (D) Snap lock Seam
62. What should be the lapped width of soldered lap joint for the sufficient contact of solder on it?
- (A) 2 to 10 times of the sheet thickness  
(B) According to the logic of the technician  
(C) 5 to 20 times of the sheet thickness  
(D) 2 to 5 times of the sheet thickness
63. What is the other name of Stake Joint?
- (A) Dove tail joint (B) Lap joint  
(C) Toy joint (D) Cup or Pocket joint
64. Trace out the odd one from the options given below :
- (A) Wiring (B) Hemming  
(C) Curling (D) Embossing
65. Size of the rivets are determined by :
- (A) Diameter of Shank (B) Diameter and Length of Shank  
(C) Diameter of rivet head (D) Length of shank only

66. What is the Tin Lead composition ratio of Extra Fine Solder?
- (A) 40 : 60 (B) 66 : 34  
(C) 63 : 37 (D) 70 : 30
67. How many classes of filler material used in brazing process?
- (A) Two (B) Three  
(C) Four (D) Five
68. Which colour is painted in oxygen cylinder used for gas welding?
- (A) Maroon (B) Black  
(C) Blue (D) Yellow
69. What is the ignition temperature of steel for gas cutting?
- (A) 600°C to 700°C (B) 700°C to 800°C  
(C) 875°C to 900°C (D) 1000°C to 1100°C
70. What is the arc temperature of Shielded Metal Arc Welding?
- (A) 3600°C - 4000°C (B) 3200°C - 3300°C  
(C) 4200°C - 4500°C (D) 2500°C - 2550°C
71. Which one of the following is not the part of Gas Metal Arc Welding accessory?
- (A) Flow meter (B) Manually held gun  
(C) Regulator (D) Oxygen Cylinder
72. What is the maximum current ampere in TIG welding (DCEN) electrode size 4 mm?
- (A) 100 (B) 300  
(C) 250 (D) 120
73. How many steps in Spot Welding?
- (A) Two (B) Five  
(C) Three (D) Four

74. Name of the electrode material used for plasma cutting is :
- (A) 3% Thoriated Tungsten (B) 4% Thoriated Tungsten  
(C) 2% Thoriated Tungsten (D) 5% Thoriated Tungsten
75. Which one of the following cutting process the least Kerf is achieved?
- (A) Oxy-acetylene (B) Plasma Arc  
(C) Laser (D) Water jet cutting
76. In water jet cutting the typical distance of nozzle from the work piece is :
- (A) 3.175 mm (B) 5.23 mm  
(C) 4.5 mm (D) 5.9 mm
77. The maximum diameter of hole drilled by bevel gear type drilling machine is :
- (A) 18 mm (B) 14 mm  
(C) 6 mm (D) 16 mm
78. Which one of the following is not the part of power shearing machine?
- (A) Upper cutting edge (B) Drift  
(C) Eccentric shaft (D) Sheet holder
79. What is the capacity of medium duty press brake?
- (A) Between 75 and 150 tonnes  
(B) Between 150 and 500 tonnes  
(C) Between 25 and 75 tonnes  
(D) Between 50 and 100 tonnes
80. What is the minimum inside corner radius of bend in Bar folder?
- (A) 2.5 times the metal thickness  
(B) 1.5 times the metal thickness  
(C) 5 times the metal thickness  
(D) 4 times the metal thickness

81. How circular shears are classified?
- (A) According to their cutters and guide
  - (B) According to their guide only
  - (C) According to their spindles on which cutters fixed
  - (D) According to their work table
82. What is the size of grooves in grooved roller for a seam closing machine?
- (A) 2 mm, 3 mm, 4 mm and 5 mm
  - (B) 3 mm, 4 mm, 5 mm and 6 mm
  - (C) 6 mm, 7 mm, 8 mm and 9 mm
  - (D) 2 mm and 3 mm
83. Which one of the following is not the part of pyramid type roll forming machine?
- (A) Body Frame
  - (B) Gear Wheel
  - (C) Handle
  - (D) Gauge
84. Which Buffing material is used for final polishing?
- (A) Rouge
  - (B) Tripoli
  - (C) Pumice
  - (D) Whiting
85. Which part of the hydraulic pipe bending machine is interchangeable?
- (A) Base plate
  - (B) Inner Former
  - (C) Bleed Screw
  - (D) Hydraulic ram
86. Which forging tool is used to remove clinkers?
- (A) Blower
  - (B) Rake and Poker
  - (C) Tongs
  - (D) Shovel
87. The capacity of pressure in a 2 stage compressor is :
- (A) 200 psi
  - (B) 150 psi
  - (C) 500 psi
  - (D) 2500 psi

88. Which Jig is used while drilling small piece parts?  
(A) Solid jig (B) Post jig  
(C) Plate and Channel jig (D) Box jig
89. The surface preparation method not suitable for light steel work is :  
(A) Pickling (B) Degreasing  
(C) Flame descaling (D) Blast cleaning
90. In galvanising process, the thickness of coating is :  
(A) 0.002 inch (B) 0.008 inch  
(C) 0.04 inch (D) 0.32 inch
91. A thin sheet of corrosion resisting metal is placed on the steel is to be protected is known as :  
(A) Sherardizing (B) Anodising  
(C) Metallizing (D) Cladding
92. Aluminium sections are manufactured by \_\_\_\_\_ method.  
(A) Forging (B) Extrusion  
(C) Casting (D) Embossing
93. The Central member of Aluminium door frame is :  
(A) Single partition (B) Door top and bottom  
(C) Interlock shutter (D) Door mullions
94. The included angle of British Standard Whitworth thread is :  
(A) 55° (B) 47.5°  
(C) 60° (D) 70°
95. What is the ideal temperature for spray painting?  
(A) 37°C (B) 40°C  
(C) 24°C (D) 18°C

96. Radiator tubes are made of :

- (A) Mild steel (B) Copper  
(C) Tin (D) Stainless steel

97. Heel shaped dolly is used for :

- (A) Repair water channels  
(B) Repair dents on car doors  
(C) Remove minor dents on car bodies  
(D) Remove dents on long depth mudguards

98. Total surface area of sphere is :

- (A)  $\pi^2$  (B)  $4a^2$   
(C)  $4\pi^2$  (D)  $a^2$

99. The volume of cone is :

- (A)  $\frac{1}{3}\pi r^2 h$  (B)  $\frac{4}{3}\pi r^3$   
(C)  $2\pi r h$  (D)  $\pi(R^2 - r^2)h$

100. The trigonometric ratio of  $\cos 30^\circ$  is :

- (A)  $\frac{1}{2}$  (B)  $\frac{\sqrt{3}}{2}$   
(C) 1 (D)  $\frac{1}{\sqrt{2}}$



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