

**180/2023**

Maximum : 100 marks

Time : 1 hour and 30 minutes

1. The instrument used for drawing curved lines other than constant radius arcs are called :  
(A) Compass (B) Protractor  
(C) French curves (D) Pro circle
2. The trimmed size of the sheet designation A2 is \_\_\_\_\_ mm.  
(A)  $841 \times 1189$  (B)  $420 \times 594$   
(C)  $594 \times 841$  (D)  $450 \times 625$
3. In unidirectional system the dimensions are placed :  
(A) Left side of the dimension fine  
(B) Above the dimension lines  
(C) Below the dimension lines  
(D) By breaking the dimension line in the middle
4. The representative fraction is 5. The actual length is 20 mm. Find the length of the drawing :  
(A) 10 cm (B) 10 mm  
(C) 0.1 mm (D) 100 cm
5. The diagonal scales are used when measurements are required in \_\_\_\_\_ units.  
(A) 1 (B) 2  
(C) 3 (D) 4
6. What are the main parts of the Vernier scale?  
(A) Vernier scale and secondary scale (B) Primary scale and Vernier scale  
(C) Primary scale and secondary scale (D) Plain scale and comparative scale
7. How many pairs of parallel lines are there in regular Hexagon?  
(A) 1 (B) 2  
(C) 3 (D) 6
8. A line passing through the focus and perpendicular to the directrix is called :  
(A) Axis (B) Tangent  
(C) Latus rectum (D) Vertex

9. Which of the following is the eccentricity for hyperbola?  
 (A) 1 (B) 1/2  
 (C) 2/3 (D) 3/2
10. A Curve generated by a point on the circumference of a circle which rolls without slipping along a fixed straight line :  
 (A) Involute (B) Helix  
 (C) Cycloid (D) Ellipse
11. The front view of a point is 50 mm above the reference line and the top view is 20 mm below the front view. The point lies in :  
 (A) First angle (B) Second angle  
 (C) Third angle (D) Fourth angle
12. When a line is perpendicular to HP and parallel to VP then what figure will be projected on HP?  
 (A) Point (B) Inclined line  
 (C) Square (D) Straight line
13. State the position of a point the front view of which lies on the reference line and the top view is 40 mm above it :  
 (A) 40 mm above H.P and in the V.P (B) 40 mm below H.P and in the V.P  
 (C) 40 mm behind V.P and in the H.P (D) 40 mm in front of V.P and in the H.P
14. If an isometric drawing is made use of isometric scale then the drawings are called :  
 (A) Isometric projection (B) Isometric view  
 (C) Isometric perception (D) Orthographic view
15. Which method of development is employed in case of sphere?  
 (A) Parallel-line development (B) Radial-line development  
 (C) Triangulation development (D) Approximation method
16. What is the largest diameter of the screw thread?  
 (A) Core diameter (B) Pitch diameter  
 (C) Nominal diameter (D) Helical diameter
17. The thread angle of British Standard Whitworth (BSW) threads are :  
 (A) 45° (B) 55°  
 (C) 30° (D) 60°

18. Screw thread profile adopted by B.I.S.:
- (A) Unified thread (B) Buttress thread  
(C) Square thread (D) Worm thread
19. A double-threaded screw has a pitch of screw 2 mm. How much the screw advances if it is made 2 revolutions?
- (A) 2 mm (B) 4 mm  
(C) 6 mm (D) 8 mm
20. Which thread is denoted by SQ 50 × 10?
- (A) Square thread with 50 mm major diameter and 10 mm pitch  
(B) Square thread with 10 mm major diameter and 50 mm pitch  
(C) Square thread with 10 mm minor diameter and 50 mm pitch  
(D) Square thread with 50 mm minor diameter and 10 mm pitch
21. Screwed joints are :
- (A) Permanent joints  
(B) Temporary joints  
(C) Neither permanent nor temporary joint  
(D) Both temporary and permanent joints
22. A fastening device having external threads on its both ends is called :
- (A) Hexagonal bolt (B) Eye bolt  
(C) Square bolt (D) Stud bolt
23. A nut in which slots are cut in a cylindrical collar provided on the top of the nut is called :
- (A) Simmond's locknut (B) Penn nut  
(C) Castle nut (D) Sawn nut
24. If the diameter of the rivet is  $d$ , then what is the margin?
- (A)  $0.5 d$  (B)  $1.5 d$   
(C)  $1.0 d$  (D)  $0.3 d$
25. According to arrangements of plates, which of the following is not a type of riveted joint?
- (A) Single cover plate butt joint (B) Double cover plate butt joint  
(C) Lap joint (D) Zigzag joint
26. For a single riveted double strap butt joint, number of rows of rivet is :
- (A) Two (B) Three  
(C) Four (D) One

27. Drawing showing the position of each part with respect to each other is called :
- (A) Assembly drawing (B) Part drawing  
(C) Machine drawing (D) Installation drawing
28. Which of the following is not a part of Knuckle joint?
- (A) Forked end (B) Taper pin  
(C) Eye end (D) Cotter
29. What does the letter “a” indicate in the fillet weld dimensioning?
- (A) Cross-section (B) Longitudinal dimension  
(C) Throat thickness (D) Leg length
30. What is the angle of deviations provided on elbows and bends in pipe works?
- (A) 90° and 45° (B) 30° and 60°  
(C) 45° and 60° (D) 20° and 40°
31. The difference between the size of the manufactured product and the corresponding basic size :
- (A) Deviation (B) Actual deviation  
(C) Upper deviation (D) Allowance
32. A dimension is stated as  $25 \pm 0.03$  mm in a drawing. What is the tolerance?
- (A) 25.03 mm (B) 24.97 mm  
(C) 0.03 mm (D) 0.06 mm
33. The tolerance zone of the hole and the shaft overlaps in :
- (A) Clearance fit (B) Interference fit  
(C) Transition fit (D) Press fit
34. In hole basis system :
- (A) The size of the shaft is made constant  
(B) The size of the hole is made constant  
(C) The permissible tolerance are given on the hole and the shaft  
(D) Allowance is given only on the hole
35. According to Indian standards, the total number of tolerance grades are :
- (A) 9 (B) 12  
(C) 18 (D) 21

36. The predominant direction of tool that makes the surface pattern on the machined surface is called :
- (A) Flaw (B) Lay  
(C) Waviness (D) Profile
37. The surface roughness on a drawing is represented by :
- (A) Curves (B) Triangles  
(C) Square (D) Zig-zag lines
38. Roughness values 0.2 to 0.8 microns is indicated by which symbol?
- (A) One triangle (B) Two triangles  
(C) Three triangles (D) Approximation
39. Which of the following process give minimum surface roughness?
- (A) Lapping (B) Honing  
(C) Grinding (D) Burnishing
40. Drawing showing the part of a machine to be manufactured in a shop :
- (A) Assembly drawing (B) Part drawing  
(C) Machine drawing (D) Shop floor drawing
41. Expansion of UCS is :
- (A) Universal Co-ordinate System  
(B) Useful Co-ordinate System  
(C) User Co-ordinate System  
(D) Unit Co-ordinate System
42. Which of the following are draft setting commands?
- (i) Snap  
(ii) Grid  
(iii) Limits  
(iv) Ortho
- (A) All of the above (B) Only (i) and (ii)  
(C) Only (i), (ii) and (iii) (D) Only (i), (ii) and (iv)
43. The function key used for object snap ON/OFF in Auto CAD is :
- (A) F2 (B) F3  
(C) F4 (D) F5



51. The command used for creating realistically shaded image of a three-dimensional wireframe or solid model is :
- (A) Imprint (B) Render  
(C) Shell (D) Solview
52. Which of the following is/are output devices?
- (i) Plotter  
(ii) Web Cam  
(iii) Projector
- (A) Only (i) (B) All of the above  
(C) Only (i) and (iii) (D) Only (i) and (ii)
53. Which are the commonly used CAD packages?
- (i) STAAD  
(ii) IDEAS  
(iii) ADOBE PHOTOSHOP  
(iv) PRO-Engineers
- (A) All of the above (B) Only (i), (ii) and (iv)  
(C) Only (i), (ii) and (iii) (D) Only (ii), (iii) and (iv)
54. The command used to display the various properties of 2D and 3D objects is :
- (A) VOLPROP (B) MASSPROP  
(C) VIEWPROP (D) AREAPROP
55. The angle between the edges of a cube in the isometric position will be equal to :
- (A) 30° (B) 45°  
(C) 60° (D) 120°
56. The practical limit ratio of forward and return stroke time in shaper is :
- (A) 2 : 3 (B) 3 : 2  
(C) 1 : 2 (D) 1 : 1
57. The included angle of lathe center for general purpose work is:
- (A) 60 degree (B) 75 degree  
(C) 90 degree (D) 30 degree
58. Climb milling is also called :
- (A) Upmilling (B) Down milling  
(C) Conventional milling (D) None of the above are correct

59. Gang milling is the operation :
- (A) Used for the production of angular surfaces
  - (B) Used for the production of flat vertical surfaces on both side of a workpiece
  - (C) Used for machining several surfaces of a workpiece simultaneously
  - (D) Used for the production of narrow slots or grooves
60. The largest diameter of work that will revolve without touching the bed of lathe is :
- (A) Swing diameter over bed
  - (B) Swing diameter over carriage
  - (C) Spindle diameter
  - (D) Bar diameter
61. The angle of inclination of lip with drill axis twist drill for general work is :
- (A) 69 degree
  - (B) 59 degree
  - (C) 49 degree
  - (D) 39 degree
62. A device which holds and locates a workpiece and guides and controls one or more cutting tools is called :
- (A) Fixture
  - (B) Clamp
  - (C) Locator
  - (D) Jig
63. Identify method used for motion control of tools in NC systems from given options.
- (A) Point to point
  - (B) Straight cut
  - (C) Contouring
  - (D) All of the above
64. The chip space between the back of one tooth and the face of next tooth in a plain milling cutter is called :
- (A) Lead
  - (B) Cutting edge
  - (C) Gash
  - (D) Relief angle
65. The reciprocating member of a shaper is called :
- (A) Base
  - (B) Column
  - (C) Ram
  - (D) Table
66. Projection welding is a :
- (A) Continuous spot-welding process
  - (B) Multi spot welding process
  - (C) Friction welding
  - (D) Seam welding
67. Oxygen to acetylene ratio in the case of carburizing flame is :
- (A) 0.9 : 1
  - (B) 1 : 1
  - (C) 1.5 : 1
  - (D) 2 : 1

68. Chaplets are :  
(A) Casting defects (B) Core supporters  
(C) Moulding boxes (D) Moulding machine
69. Tool used to cut threads on the inside of a hole, as in a nut is :  
(A) Tap (B) Reamer  
(C) Dies (D) Twist drill
70. Brake is a machine used in sheet metal work for :  
(A) Bending and folding (B) Marking  
(C) Striking (D) Cutting
71. The process of increasing the thickness of a bar at the expense of its length by end pressure is :  
(A) Drawing down (B) Punching  
(C) Setting down (D) Upsetting
72. In sand moulding, the top part of flask is called :  
(A) Cope (B) Cheek  
(C) Drag (D) None of the above
73. The operation of cutting a sheet metal through part of its length and then bending the cut portion is :  
(A) Parting (B) Notching  
(C) Slitting (D) Lancing
74. The round hole provided in the Anvil is called :  
(A) Beak (B) Sprue hole  
(C) Pritchel hole (D) Hardie hole
75. In thermit welding iron oxide and aluminium powder are mixed in the proportion :  
(A) 1 : 1 (B) 1 : 3  
(C) 3 : 3 (D) 3 : 1
76. On what basis are fire and water tube boilers classified?  
(A) Depending the combustion products formed  
(B) Depending the state of fuel  
(C) Depending on the steam formation rate  
(D) Depending tubular heating surface

77. Both the pressure and velocity of steam drop in the case of :
- (A) Impulse turbine
  - (B) Reaction turbine
  - (C) Velocity compounded impulse turbine
  - (D) Pressure compounded impulse turbine
78. The first nuclear power plant in India was installed at :
- (A) Tarapur
  - (B) Neyveli
  - (C) Kudankulam
  - (D) Kota
79. The economiser in a boiler is used to :
- (A) Increase the flue gas temperature
  - (B) Increase the efficiency of boiler
  - (C) Decrease the consumption of fuel
  - (D) Reduce the water consumption
80. La Mont boiler is a ————— pressure, water tube steam boiler working on forced circulation.
- (A) Low
  - (B) High
  - (C) Medium
  - (D) Super-critical
81. Which of the following statements is incorrect?
- (A) In spur gears, friction losses are less than 5 percent
  - (B) Mitre gears are spur gears with the same number of teeth
  - (C) Worm gears are generally made of cast iron
  - (D) Cycloid gears are free from interference
82. Priming is necessary in the following type of pump :
- (A) Gear pump
  - (B) Reciprocating pump
  - (C) Centrifugal pump
  - (D) Multi stage pump
83. Belt drive is :
- (A) Positive drive
  - (B) Not a positive drive
  - (C) Used for small torque transmission
  - (D) Used for non-slip drive

84. The centrifugal tension in belts :
- (A) Increases the power transmission
  - (B) Decreases the power transmission
  - (C) Increases the wrap angle
  - (D) Increases the belt tension without affecting power transmitted
85. The stress in disc type flywheel as compared to rim type flywheel is :
- (A) Equal
  - (B) More
  - (C) Less
  - (D) May be more or less
86. The angle between king pin centre line and vertical in the plane of wheel is called :
- (A) King pin inclination
  - (B) Castor
  - (C) Camber
  - (D) Steering axis inclination
87. In Battery coil ignition system, the correct sequence of flow of current is :
- (A) Battery-ammeter-ignition coil-distributor-spark plug
  - (B) Battery-ignition coil-ammeter-distributor-spark plug
  - (C) Battery-ignition coil-distributor-ammeter-spark plug
  - (D) Battery-distributor-ignition coil-ammeter-spark plug
88. In four cylinder in-line engine, the probable firing order is :
- (A) 1-3-4-2
  - (B) 1-2-3-4
  - (C) 4-3-2-1
  - (D) 2-4-1-3
89. The following type of arrangement is used in synchromesh type gearbox :
- (A) Single plate clutch
  - (B) Dog clutch
  - (C) Fluid clutch
  - (D) Semi-centrifugal clutch
90. The self-ignition temperature of diesel when compared to that of gasoline is :
- (A) Equal
  - (B) Lower
  - (C) Higher
  - (D) Cannot be predicted
91. Which of the following constituents of the steel is weak and soft?
- (A) Pearlite
  - (B) Martensite
  - (C) Austenite
  - (D) Ferrite
92. Dislocation in materials is a \_\_\_\_\_ defect.
- (A) Point
  - (B) Line
  - (C) Plane
  - (D) Volume

93. Error in measurement is the difference between :
- (A) Precision and accuracy
  - (B) True value and measured value
  - (C) Precision and true value
  - (D) Precision and measured value
94. One Angstrom is equal to :
- (A)  $10^{-6}$  m
  - (B)  $10^{-3}$  m
  - (C)  $10^{-10}$  m
  - (D)  $10^{-12}$  m
95. What is the percentage of carbon in plain carbon steel?
- (A) Above 80%
  - (B) Less than 10%
  - (C) Less than 1.7%
  - (D) Around 20%
96. Least count of a micrometer is :
- (A) 0.02 mm
  - (B) 0.05 mm
  - (C) 0.1 mm
  - (D) 0.01 mm
97. Which of the following is incorrect with regard to vernier height gauge?
- (A) Both the surfaces of measuring jaw should be at  $45^\circ$  to the base
  - (B) Surface plate is used as datum surface for measurements
  - (C) Removable clamps are used
  - (D) These gauges can be used for scribing purposes
98. This chart is a graphic representation of all the production activities occurring on the shop floor :
- (A) Templates
  - (B) Quality control
  - (C) Flow process chart
  - (D) Operation process chart
99. Which of the following industries should be located near the vicinity of raw materials?
- (A) Bicycles
  - (B) Mobile phones
  - (C) Machine tools
  - (D) Steel mills
100. On which of the following types of surfaces should a class A fire extinguisher not be used?
- (A) Cloth
  - (B) Wood
  - (C) Paper
  - (D) Electrical equipment
-

**SPACE FOR ROUGH WORK**

**SPACE FOR ROUGH WORK**