

85/2014

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. V belt run in _____ degree v-groove.
(A) 60° (B) 55°
(C) 29° (D) 40°
2. The _____ is the operation of forming the edges of a component into roll by bending the sheet metal in order to strengthen the edges and to provide smoothness to its surface :
(A) Bending (B) Curling
(C) Lancing (D) Forming
3. The back gear system of a lathe is used to :
(A) Reduce the spindle speed (B) Increase the spindle speed
(C) Only used in thread cutting (D) Regulate the spindle speed
4. _____ is fastening devices used to provide shoulders for positioning or limiting the movement of parts in an assembly :
(A) Key (B) Cotter
(C) Cir-clip (D) Spline
5. Cross head is used to connect :
(A) Piston rod and small end of connecting rod
(B) Piston and crank
(C) Connecting rod and crank
(D) None of these
6. Screw jack is operated by :
(A) Using Tommy bar (B) Handle
(C) Lever (D) Spanner
7. In which type of hammer both ends are sharpened and cross to the handle :
(A) Stretching hammer (B) Creasing hammer
(C) Bullet hammer (D) Setting hammer

8. _____ is an operation of closing down the edges of the plates and heads of the rivets to form a metal to metal joint.
- (A) Caulking (B) Hammering
(C) Fullering (D) Riveting
9. A solid having four equal equilateral triangular faces :
- (A) Cube (B) Square prism
(C) Tetrahedron (D) Square
10. If the surface is _____ to the plane of projection, the resulting projection will be the true shape of surface :
- (A) Parallel (B) Perpendicular
(C) Inclined (D) None
11. Eccentricity is always less than one for :
- (A) Ellipse (B) Parabola
(C) Hyperbola (D) Helix
12. The curve generated by the point on the circumference of a circle, rolling along another circle inside it is called :
- (A) Hypocycloid (B) Epi-cycloid
(C) Cycloid (D) Involute
13. For getting higher hardness of pencil leads _____ is added more.
- (A) Graphite (B) Kaolin
(C) Carbon (D) Wax
14. The figure VVVV is the roughness symbol of surface finish, which indicates the roughness grade of :
- (A) N1, N2 and N3 (B) N4, N5 and N6
(C) N7, N8 and N9 (D) N10 and N11
15. Journal bearings can only support :
- (A) Axial load (B) Radial load
(C) Inclined Loads (D) None
16. An Oldham coupling connect two shaft, when they are :
- (A) Intersecting (B) Parallel
(C) Co-axial (D) Inclined

17. In a screw thread profile the _____ diameter is equal to the major diameter minus single depth.
- (A) Core (B) Crest
(C) Pitch (D) Nominal
18. For effective cutting of steel with hand hack saw, which coolant is suitable :
- (A) Water (B) Soluble oil
(C) Compressed air (D) Kerosene
19. Included Morse taper angle is :
- (A) 7° (B) 1 ½ °
(C) 3° (D) 12°
20. The front face of the chuck jaws are stepped. The purpose of these steps is to :
- (A) Add appearance (B) Reduce weight
(C) Have increasing gripping power (D) Hold larger diameter work
21. A ball peen hammer is specified by :
- (A) The weight (B) The length of the handle
(C) The shape of the face (D) The material of the head
22. Normal storage capacity of dissolved acetylene gas cylinder is :
- (A) 6 Cubic Meter (B) 8 Cubic Meter
(C) 10 Cubic Meter (D) 10.5 Cubic Meter
23. The unit of amount of current flow in a circuit is called :
- (A) Volt (B) Ampere
(C) Ohm (D) Farad
24. The distance between the tip of the electrode and the parent metal where arc strike is called :
- (A) Arc length (B) Arc gap
(C) Arc distance (D) Arc width
25. Spelter of different composition is required to braze different metals. Which one of the following composition is suitable for brazing steel?
- (A) 1 Part copper + 1 Part zinc (B) 2 Part copper + 1 Part zinc
(C) 3 Part copper + 2 Part zinc (D) 4 Part copper + 3 Part zinc

26. What defect occurs if Cast Iron is welded without Pre-heating?
- (A) Porosity (B) Undercut
(C) Crack (D) Blow hole
27. One end of the steam engine cylinder is closed with a cover plate while the other end is fitted with :
- (A) Stuffing box (B) Cross head
(C) Connecting rod (D) Crank shaft
28. Which flux is known as killed spirit?
- (A) Muriatic acid (B) Hydrochloric acid
(C) Resin (D) Zinc chloride
29. Gun metal is an alloy of copper, zinc and :
- (A) Aluminium (B) Tin
(C) Lead (D) Antimony
30. The beam compass is also known as :
- (A) Wing compass (B) Divider
(C) Trammel (D) Hermaphrodite caliper
31. The distance which the cutting edge of tool passes over the material in a minute while machining is known as :
- (A) rpm (B) Feed
(C) Machine speed (D) Cutting speed
32. Drawing out is a _____ operation.
- (A) Finishing (B) Suiting
(C) Fitting (D) Forging
33. The standard ratio of cutting to return stroke of a slotting machine is :
- (A) 1:3 (B) 3:1
(C) 2:3 (D) 3:2
34. A slotting tool cut the material during :
- (A) Forward stroke (B) Return stroke
(C) Forward and Return stroke (D) None

35. _____ are used for remove clinkers from the fire.
- (A) Shovel (B) Tongs
(C) Hammer (D) None of these
36. Clapper box in shaper used for :
- (A) To avoid length of tool (B) To lift the tool during cutting stroke
(C) To ensure cutting action (D) To lift the tool during return stroke
37. While normalizing the components should be cooled :
- (A) by dipping in water (B) by forced air
(C) by quenching in oil (D) In still air to room temperature
38. What is the purpose of steady rest using in lathe?
- (A) Additional clamp support for the head stoke
(B) Additional support for the work
(C) Additional support for the tool
(D) To reduce job speed
39. The drilled hole is larger than the size of drills used. The reason is :
- (A) Too much speed (B) Helix angle not accurate
(C) Lip clearance not accurate (D) Unequal length of the cutting edge
40. The purpose of using sign bar is to :
- (A) Measure the length of the job (B) Find the angle of taper job
(C) Check the flatness of job (D) Check the level of the job
41. Honing is used to finish :
- (A) Flat surface (B) Shaft
(C) Hole (D) Irregular surface
42. Gasoline is a :
- (A) Fuel (B) Lubricator
(C) Cutting fluid (D) None of these
43. Which is the oldest machine?
- (A) Lathe (B) Triller
(C) Miller (D) Slotter

44. Engineering language is a _____ language.
- (A) Written (B) Graphical
(C) Verbal (D) None of these
45. The roughness grade number N12 has _____ microns.
- (A) 25 (B) 12.5
(C) 1.6 (D) 50
46. The total amount of permissible variation in the basic size of shaft is called :
- (A) Fit (B) Allowance
(C) Fundamental deviation (D) Tolerance
47. The accuracy of a metric micrometer is _____ mm.
- (A) 0.1 mm (B) 0.01 mm
(C) 0.001 mm (D) 0.02 mm
48. The code of practice on general engineering drawing is :
- (A) IS: 962-1967 (B) IS: 919-1963
(C) IS: 1481-1961 (D) IS: 696
49. Quick return motion is used in :
- (A) Lathe (B) Shaper
(C) Drilling machine (D) Gas cutter
50. Tap is used to cut :
- (A) Internal thread (B) External thread
(C) Holes (D) Slots
51. Which head is used to set any require angle in the combination set?
- (A) Square set (B) Centre head
(C) Protractor head (D) Rule
52. _____ is a process of shaping metals and alloys into semi finished products by passing them between two rolls rotating in opposite direction.
- (A) Extrusion (B) Drawing out
(C) Rolling (D) Hobbing

53. _____ is the process of cutting a closed outside contour of a shape.
- (A) Notching (B) Slitting
(C) Piercing (D) Blanking
54. Pipe size is generally specified by its :
- (A) Outer diameter (B) Inner diameter
(C) Outer diameter and wall thickness (D) Inner diameter and wall thickness
55. _____ is used to close an internally threaded pipe.
- (A) Cap (B) Nipple
(C) Flange (D) Plug
56. Instrument used to measure the temperature of furnaces of higher temperature :
- (A) Thermometer (B) Calorimeter
(C) Pyrometer (D) None of these
57. Which is the formula used for calculating the HP?
- (A) $2\pi NT4500$ (B) $\pi NT4500$
(C) $NT4500$ (D) $4500 2\pi NT$
58. One British thermal unit is _____ calories.
- (A) 453.6 calories (B) 252 calories
(C) 4200 calories (D) 1.8 calories
59. The ratio of the volumetric stress to the volumetric strain :
- (A) Young's modulus (B) Poisson's ratio
(C) Factor of safety (D) Bulk modulus
60. A 10 HP motor running for 8 hours for 20 days. What is the energy consumed by the motor in units of electricity?
- (A) 1176.8 unit (B) 2688 unit
(C) 1193 unit (D) 1600 unit
61. Which of the following is an example for first order lever?
- (A) Wheel barrow (B) Common balance
(C) Tongs (D) Nut cracker

62. When a solid immersed in liquid, the upward thrust experienced by it is called :
- (A) Floatation (B) Buoyancy
(C) Relative density (D) Density
63. The point at which there is a marked increase in elongation without increase in load :
- (A) Ultimate stress (B) Elastic limit
(C) Yield point (D) Strain
64. Which steel is used to make magnet?
- (A) High carbon steel (B) High speed steel
(C) Vanadium steel (D) Cobalt steel
65. Which is not the law of limiting friction?
- (A) Directly proportional to the normal reaction
(B) Dependent on the thickness of the surface in contact
(C) Dependent upon the type of surface in contact
(D) Independent of the area of the surface
66. The quantity of heat required to turn 1 gram of substance from solid to liquid with rise in temperature :
- (A) Specific heat (B) Latent heat
(C) Thermal efficiency (D) None
67. The unit of coefficient of linear expansion :
- (A) $m/^{\circ}C$ (B) Number/ $^{\circ}C$
(C) $N/^{\circ}C$ per original length (D) N
68. Principle of lever :
- (A) load X load arm = effort X effort arm (B) load X load arm = effort effort arm
(C) load effort (D) load X effort arm = effort X load

69. Volume of frustum of cone :
- (A) $\pi 4 (d + d) (D - d)Xh$ (B) $\pi 3 Xh(R^2 + r^2 + Rr)$
(C) $\pi \pi 6 (D^3 - d^3)$ (D) $23 \pi r^3$
70. Reamer is used for :
- (A) Finish the hole (B) Cutting thread
(C) Enlarge and finish the hole (D) None of these
71. Bronze is an alloy of :
- (A) Copper and zinc (B) Tin and zinc
(C) Copper and tin (D) Zinc and lead
72. Very small circles are drawn by means of :
- (A) Wing compass (B) Small bow compass
(C) Drop bow compass (D) Pro circle
73. The length of an arrow head used for dimensioning is _____ times its width.
- (A) 2 (B) Same
(C) 4 (D) 3
74. _____ is the part of circle between any two points on the circumference.
- (A) Sector (B) Semi-circle
(C) Segment (D) Arc
75. For _____ files the width is constant.
- (A) Flat file (B) Round
(C) Square (D) Hand file
76. Feeler gauges are used for :
- (A) Check the radius of a curved surface
(B) Check the thickness of plate
(C) Check the gap between the mating surface
(D) Checking taper

77. To cut thin sheet of gauge size No. 20 and above :
- (A) Bench shear (B) Block shear
(C) Hand shear (D) Chisel
78. A metal plate of thickness less than _____ is considered as sheet.
- (A) 1 mm (B) 2 mm
(C) 3 mm (D) 4 mm
79. To enlarge the hole size by internal turning :
- (A) Grooving tool (B) Undercutting tool
(C) Forming tool (D) Boring tool
80. One micron is equal to :
- (A) 0.001 m (B) 0.0001 m
(C) 0.0001 mm (D) 0.001 mm
81. Which one is not suitable?
- (A) Second cut file (B) Double cut file
(C) Single cut file (D) Rasp cut file
82. The size of the vice is usually specified by :
- (A) The length of the movable jaw
(B) The width of the jaw
(C) The maximum distance that can be opened between the jaws
(D) Weight of the vice
83. Which property of metal can be stated under mechanical property?
- (A) Specific gravity (B) Fusibility
(C) Conductivity (D) Tenacity
84. Keys are classified according to the relative position of the shaft and :
- (A) Length of shaft (B) Diameter of hub hole
(C) Cross section of the key (D) Diameter of the shaft

85. What is the ratio between two sides of the drawing sheet?
- (A) 1:2 (B) $3:\sqrt{2}$
(C) $1:\sqrt{2}$ (D) $1:\sqrt{3}$
86. Ignition system are not required for _____ engine.
- (A) CNG (B) Diesel
(C) Petrol (D) None of these
87. Identify the characteristics of flexible hack-saw blade :
- (A) Full width hardened (B) Except pin hole hardened
(C) Only teeth are hardened (D) No portion hardened
88. Copper is used for soldering iron because :
- (A) Its melting point is high (B) Its high resistant to wear
(C) It can prevent corrosion (D) It is good conductor of heat
89. A two stroke cycle engine produces one power stroke in :
- (A) Each revolution of crankshaft (B) Two revolution of crankshaft
(C) Three revolution of crankshaft (D) Four revolution of crankshaft
90. _____ is a safety device used for protecting eyes while working in the furnace.
- (A) Goggles (B) Mask
(C) Apron (D) Gloves
91. An opening through which the blast air enters blast furnace is :
- (A) Wind box (B) Blower
(C) Tuyers (D) Slag hole
92. _____ is used to hold and grip the pipe.
- (A) Pipe vice (B) Die stock
(C) Pipe wrench (D) Pipe grip

93. Before drilling a hole its centre should be marked with a :
- (A) Chisel (B) Drill bit
(C) Punch (D) None of these
94. The angle of acme thread is :
- (A) 60° (B) 55°
(C) 29° (D) 45°
95. The function of connecting rod is to :
- (A) Increase speed
(B) Decrease speed
(C) Convert reciprocating motion of the piston into rotary motion
(D) None of these
96. Power produced in the cylinder of IC engine is called :
- (A) Total power (B) Indicated power
(C) Brake power (D) None of these
97. The clutch plate is located between the gear box and :
- (A) Engine (B) Differential
(C) Propeller shaft (D) Rear axle
98. The device used for hold, locate the work piece as well as guide the cutting tool :
- (A) Jig (B) Fixture
(C) Machine table (D) Machine vice
99. Pitch circle diameter in millimeter divided by the number of teeth in a gear is called :
- (A) Circular pitch (B) Diametrical pitch
(C) Module (D) Pitch
100. Herring bone gears are also known as :
- (A) Double helical gears (B) Rack and pinion
(C) Single helical gears (D) Bevel gears