

43/2015

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. The locus of a point moving in a plane in such a way that the sum of its distance from 2 fixed points is a constant is called :
(A) Ellipse (B) Parabola
(C) Hyperbola (D) Cycloid
2. 1 cubic meter is equal to :
(A) 10000 Litres (B) 1000 Litres
(C) 100 Litres (D) None of the above
3. 1 billion is :
(A) 10^3 (B) 10^6
(C) 10^9 (D) 10^{12}
4. Hardenability indicates that :
(A) Uniform hardness throughout the section
(B) It can be easily hardened
(C) Slow cooling is sufficient
(D) The hardness is more
5. Die casting is a process :
(A) Which uses permanent moulds to which molten metal is poured
(B) Molten metal is poured into a revolving mould
(C) Molten metal is poured into sand mould
(D) All the above
6. Seamless tubes are manufactured by :
(A) Spinning (B) Piercing
(C) Casting (D) Rolling
7. Cold shut is a defect found in :
(A) Turning (B) Grinding
(C) Forging (D) Extrusion

8. The heat treatment for improving machinability is :
- (A) Spherodising (B) Tempering
(C) Normalizing (D) Hardening
9. Which one of the following is a three dimensional figure? :
- (A) Trapezium (B) Rhombus
(C) Cycloid (D) Cone
10. If the radii of two spheres are in the ratio 1:2 their volume will be in the ratio :
- (A) 1:2 (B) 1:4
(C) 1:8 (D) 1:16
11. The length of diagonal of a square is 10cm. then its area is :
- (A) 100 sq. cm (B) 10 sq. cm
(C) 50 sq. cm (D) None of the above
12. Which of the following is a unit for measurement of angle?
- (A) Degree (B) Minute
(C) Second (D) All the above
13. The value of $\cos 60$ is :
- (A) 0.5 (B) 1
(C) 0 (D) $\sqrt{2}$
14. High speed steel is used to make :
- (A) engine parts of an automobile (B) aircraft engine
(C) wheel of automobile (D) cutting tool
15. In normalizing cooling is done in :
- (A) Water (B) Oil
(C) Furnace (D) Air

16. Brass is an alloy of :

- (A) Copper and Zinc
- (B) Copper and Tin
- (C) Nickel and Copper
- (D) None of the above

17. Which is a post hardening heat treatment?

- (A) Tempering
- (B) Case Hardening
- (C) Annealing
- (D) Normalizing

18. Stainless steel is an alloy of :

- (A) Iron, Nickel and Chromium
- (B) Tungsten and Chromium
- (C) Vanadium and Molybdenum
- (D) None of the above

19. Cutting speed is selected by considering :

- (A) Condition of the machine
- (B) Cutting tool Material
- (C) Surface finish required
- (D) All the above

20. The melting point of pure iron is:

- (A) 1535° C
- (B) 723° C
- (C) 910° C
- (D) 1130° C

21. Eutectoid steel contains :

- (A) Pearlite and Cementite
- (B) Pearlite
- (C) Austenite
- (D) None of the above

22. The thickness of a thin steel sheet can be measured by :

- (A) Steel Rule
- (B) Micrometer
- (C) Outside Caliper
- (D) Measuring Machine

23. On a metric Vernier Caliper 1 main scale division is 0.5 mm. 24 main scale divisions are divided into 25 divisions on the vernier. Its least count is :
- (A) 0.05 mm (B) 0.02 mm
(C) 0.005 mm (D) 0.01 mm
24. On a planing machine :
- (A) The cutting tool reciprocates (B) The work piece reciprocates
(C) Tool or work reciprocates (D) All the above
25. Usually cutting fluid is not used for machining grey cast Iron because :
- (A) It is a very soft metal (B) Presence of free graphite
(C) Presence of Cementite (D) To reduce cost
26. Guide ways of Lathe beds are hardened by :
- (A) Pack carburizing (B) Cyaniding
(C) Flame hardening (D) None of the above
27. In heat treatment quenching is done :
- (A) To reduce hardness (B) To remove internal stresses
(C) To Increase hardness (D) To refine grain
28. In a single start thread lead is equal to :
- (A) Pitch (B) Half the pitch
(C) Double the pitch (D) None of the above
29. The number of teeth on a driving gear and driven gear are 30 and 60 respectively. If the rpm of the driving gear is 100 then rpm of driven gear is:
- (A) 200 (B) 30×60
(C) 50 (D) $30 + 60$

30. The furnace used in a medium foundry is : .
- (A) Blast furnace (B) Open hearth furnace
(C) Besemer Converter (D) Cupola
31. Which machining process is more accurate?
- (A) Turning (B) Milling
(C) Grinding (D) Shaping
32. In arc welding the transformer is used to :
- (A) Increase voltage (B) Reduce voltage
(C) Increase or reduce voltage (D) None of the above
33. In gas cutting the flame used is :
- (A) LPG (B) Natural Gas
(C) Oxyacetylene (D) CNG
34. Duralumin is an alloy of :
- (A) Aluminium & Tin
(B) Aluminium, Copper, Manganese & Magnesium
(C) Aluminium & Nickel
(D) Aluminium & Chromium
35. Manganese is considered as a useful impurity in steel because :
- (A) It counteracts the harmful effects of sulphur
(B) Reduce oxygen content
(C) Improve tensile strength
(D) All the above
36. A steel is said to be cold worked when :
- (A) Worked in cold condition
(B) Worked below melting point
(C) Worked below recrystallization temperature
(D) Worked below room temperature
37. Cutting fluid used for steel is :
- (A) Soluble oil (B) Sulphurised oil
(C) Mineral oil (D) All the above

38. The circular scale of a micro meter is on the :
 (A) Barrel (B) Ratchet
 (C) Thimble (D) Above fiducial line
39. Mass of a material of specific gravity 7.6 and volume 1 cubic meter is :
 (A) 76 kg (B) 760 kg
 (C) 7600 kg (D) None of the above
40. 1 micron is equal to :
 (A) 10^{-1} mm (B) 10^{-2} mm
 (C) 10^{-3} mm (D) 10^{-3} meter
41. Vernier Caliper is used to measure :
 (A) Internal dimension
 (B) External dimension
 (C) Both external and internal dimension
 (D) None of the above
42. Accuracy of measuring instrument is related to :
 (A) Correctness of measurement
 (B) Repeatability
 (C) Both correctness and repeatability
 (D) Correctness or repeatability
43. The international standard unit for measurement of linear dimension is :
 (A) Micron (B) Meter
 (C) Foot (D) Centimeter
44. The materials used for surface plate are :
 (A) Granite or Cast iron (B) Only Granite
 (C) Only Cast iron (D) None of the above
45. The telescopic gauge is used to measure :
 (A) Internal Dimension (B) External dimension
 (C) Dimension of distant objects (D) All the above
46. Sensitivity of a measuring instrument is :
 (A) Ability to detect small difference in measured quantity
 (B) Readability of dimension
 (C) Repeatability
 (D) Correctness of measurements

47. To check the correctness of profile of a thread, we use :
- (A) Bench Micrometer (B) Screw pitch gauge
(C) Profile projector (D) Angle bar
48. Which one of the following is not an angle measuring device?
- (A) Bevel protractor (B) Combination square
(C) Sine bar (D) Angle iron
49. A universal surface gauge is used for :
- (A) Checking flatness (B) Checking straightness
(C) Checking angle (D) Layout work and inspection
50. Part of a measuring device carrying the scale is called :
- (A) Housing (B) Frame
(C) Index (D) Dial
51. The specification of a sign bar is :
- (A) Its total length (B) Distance between centers of the roller
(C) Diameter of roller (D) Length of roller
52. Tolerance is specified :
- (A) To obtain desired fit (B) To get accuracy
(C) Simplify inspection (D) Accommodate workman imperfection
53. Feeler gauge is used to check :
- (A) Radius (B) Surface roughness
(C) Pitch of the screw (D) Thickness of clearance
54. Intentional difference between mating parts is to get :
- (A) Accuracy (B) Desired fit
(C) Cost reduction (D) None of the above
55. In third angle projection front view is :
- (A) Above X-Y line (B) Below X-Y line
(C) Above or below X-Y line (D) None of the above
56. In orthographic projection the projectors are :
- (A) Parallel to HP (B) Parallel to VP
(C) Perpendicular to the plane (D) Inclined to the plane

57. The point (-2-3) is in the :
(A) Second quadrant (B) Third quadrant
(C) First quadrant (D) Fourth quadrant
58. In isometric projection the three axes of projection are :
(A) Parallel to one another (B) Mutually perpendicular
(C) Inclined to one another (D) None
59. Isometric view of a circle kept in the vertical position will be :
(A) Circle (B) Ellipse
(C) Line (D) Any one of the above
60. In grey cast iron :
(A) No carbon is present
(B) Carbon is in the graphite form
(C) Carbon is present in the Cementite form
(D) Carbon is present as Austenite
61. Nitriding is :
(A) A softening process (B) Case hardening process
(C) Surface finishing process (D) Corrosion prevention process
62. Which one of the following is not a part of the die set?
(A) Guide pin (B) Guide bushing
(C) Shank (D) Stripper plate
63. The function of a pilot is to :
(A) Stop the strip (B) Register the strip
(C) Pierce hole (D) Punch hole
64. The operation by which a sheet is cut through the part of its length and the cut part is bent is called :
(A) Slitting (B) Lancing
(C) Curling (D) Notching
65. Which one of the following is used for producing pierced blanks?
(A) Piercing tool (B) Blanking tool
(C) Combination tool (D) Compound tool

66. In blanking clearance is provided on :
- (A) Punch (B) Die
(C) Die or Punch (D) None of the above
67. Which one is not bend element?
- (A) Bend angle (B) Bend allowance
(C) Neutral plane (D) Bend clearance
68. In a blanking operation the size of the work piece is S and clearance C the punch size is given by :
- (A) $S+2C$ (B) $S+4C$
(C) $S-4C$ (D) $S-2C$
69. The female part of a mould which forms the external shape of the moulding is called :
- (A) Cam (B) Core
(C) Cavity (D) Sprue
70. Which one of the following is an example of thermoplastic?
- (A) Bakelite (B) Polyester
(C) PVC (D) Phenol formaldehyde
71. A channel or orifice connecting the runner to the impression is called :
- (A) Gate (B) Cavity
(C) Side core (D) Insert
72. Shrinkage of material decreases with :
- (A) Increase of material temperature
(B) Increase of mould temperature
(C) Increase in wall thickness
(D) Higher injection pressure
73. The term PARISON is associated with :
- (A) Compression moulding (B) Blow moulding
(C) Extrusion (D) Injection moulding
74. A thin film formed on the parting surface during moulding is called :
- (A) Land (B) Filament
(C) Flash (D) Shot