

Sample Questions for 22343 - (Mechanical Engineering Materials)

Topic-1

- 1) The Brinell hardness number is calculated by dividing the
- applied load with the surface area of the indentation.
 - surface area of the indentation with applied load.
 - applied load with depth of the indentation.
 - depth of the indentation with diameter of indenter

- 2) This equation is atomic radius of _____

$$4R = \sqrt{a^2 + a^2 + a^2}$$
$$\rightarrow a = \frac{4R}{\sqrt{3}}$$

- BCC lattice
- FCC lattice
- HCP lattice
- Simple Cube

- 3) In Optical microscope the prism reflector is so positioned that only about _____ of the area of the objective aperture is obstructed.

- 1/2
- 1/3
- 1/4
- 2/3

Topic-2

- 4) Identify element from the following, which should be added in alloy steel to increase creep strength at high temperature.

- Titanium
- Silicon
- Molybdenum
- Vanadium

- 5) Choose type of stainless steel from the following which is used to make heating elements for furnace.

- Austenitic stainless steel
- Martensitic stainless steel
- Ferritic stainless steel
- None of the above

- 6) Identify the meaning of following specification of steel

X10cr18ni9s3

- High Alloy Steel, 0.10%C, 18%Cr, 9%Ni, Pickled Condition
- High Alloy Steel, 1.0%C, 18%Cr, 0.9%Ni, Pickled Condition
- High Alloy Steel, 0.10%C, 1.8%Cr, 9%Ni, Pickled Condition
- High Alloy Steel, 1.0%C, 1.8%Cr, 0.9%Ni, Pickled Condition

Topic -3

7) Annealing temperature range for hypoeutectoid steel is

- a) Upper critical temperature +50 °c
- b) Upper critical temperature +250 °c
- c) Lower critical temperature +50 °c
- d) Below lower critical temperature

8) Ductile cast iron ASTM A536 contains

- a) C=3.5-5.9%
- b) C=3.5-3.9%
- c) C=3.5-6.9%
- a) C=3.5-4.9%

9) Cast iron pipes are mainly used.

- a) for conveying steam
- b) in water and sewage systems
- c) in pressure lubrication systems on prime movers
- d) all of the above

Topic-4

10) In porous bearing , oil which is forced from the loaded zone of the bearing is reabsorbed by -----

- a) Gravitational force
- b) Centrifugal force
- c) Capillary action
- d) Magnetic action

11) ----- is an alloy made up of 90% Aluminium, 4% Copper, 0.5-1% Magnesium, and less than 1% Manganese

- a) Y alloy
- b) Bronze
- c) Duralumin
- d) Hindalium

12) If weights are same, the electrical conductivity of aluminum is ----- conductor than copper.

- a) Higher
- b) Lower
- c) Equal
- d) Zero

Topic-5

13) Polymeththyle Methacrylate is used in -----

- a) Bottles
- b) Ropes
- c) Brush Bristles
- d) Brush Bristles

14) _____ Is not thermosetting material?

- a) Vinyls
- b) Epoxides
- c) Bakelites
- d) Malemines

15) _____ Discolours on ageing by sunlight

- a) Nylons
- b) Phenol formaldehyde
- c) Acrylic
- d) Abs

Topic-6

16) Annealing temperature range for hypoeutectoid steel is

- a) Lower critical temperature +50 °c
- b) Below lower critical temperature
- c) Upper critical temperature +50 °c
- d) Upper critical temperature +250 °c

17) Guide-ways of Lathe are hardened by _____

- a) Annealing
- b) Normalizing
- c) Tempering
- d) Hardening

18) Formation of thick layer of scale on the surface of steel articles can be minimised by

- a) Heating in furnaces with reducing neutral or protective atmosphere
- b) Heating in boxes with used carburising agent or cast iron chips
- c) Heating in molten salt bath
- d) Any of the above