

CHAPTER 1 :- Properties of materials

- 1) The solids which have regular arrangement of atoms is called as.
a) Amorphous b) Crystalline c) Isotropic d) Semiconductor.
- 2) In BCC total number of atoms is
a) 4 b) 2 c) 1 d) 6
- 3) The ability of material to withstand stress without fracture is known as
a) Strength b) Stiffness c) Ductility d) Elasticity
- 4) The instrument used for microstructure observation is
a) Pyrometer b) Microscope c) Thermometer d) Watch
- 5) This is not an etching reagent.
a) Nitric acid b) Methyl alcohol c) Ethyl alcohol d) Brine Solution
- 6) Anything that has mass and occupies space
a) Metal b) Electron c) Neutron d) Ceramic
- 7) Metals are elements that can share maximum number of
a) Proton b) Electron c) Neutron d) Atom.
- 8) When two or more metals melted together known as
a) Metals b) Nonmetals c) Polymer d) Alloys
- 9) The substance which is in without form
a) Amorphous b) Crystalline c) Ferrous d) Non ferrous
- 10) Glass is an example of
a) Amorphous b) Crystalline c) Base metal d) Non ferrous
- 11) In a simple cubic structure total number of atoms is
a) 4 b) 3 c) 2 d) 1
- 12) In HCP structure total number of atoms is
a) 4 b) 3 c) 6 d) 8
- 13) In FCC structure total number of atoms is

a) 4 b) 3 c) 4 d) 8

14) Elasticity is ----- Property of material.

a) Mechanical b) Electrical c) Physical d) Chemical

15) The weight per unit volume is called as

a) Density b) Sp. Wt. c) Sp. Gr. D) Sp. Vol.

16) The ability of material to withstand scratch, wear, abrasive resistance is known as

a) Toughness b) Hardness c) Fatigue d) Elasticity.

17) The slow and progressive deformation with time and at constant stress and temperature is

a) Fatigue b) Hardness c) Brittleness d) Elasticity.

18) This is not a etching substance.

a) Alumina b) Brass c) Nickel d) Bronze.

19) Brinell hardness is conducted as per

a) ASTM b) ASME c) ISI d) ISO

20) Normally diameter of indenter in hardness test is taken in ----- mm

a) 10 b) 5 c) 15 d) 20

21) The time for Brinell hardness test is in ----- sec

a) 15 b) 10 c) 12 d) 5

22) The atomic packing factor for SCS is

a) 0.52 b) 1 c) 1.2 d) 0.1

23) The atomic packing factor for BCC is

a) 0.52 b) 0.62 c) 1.2 d) 0.1

24) The atomic packing factor for FCC is

a) 0.52 b) 1 c) 1.2 d) 0.74

25) The atomic packing factor for HCP is

a) 0.52 b) 1 c) 0.74 d) 0.1

CHAPTER 2 EQUILLIBRIUM DIAGRAMS

- 26) Solid solution of metal starts with (CO₂)
a) Nuclei b) Proton c) Electron d) Neutron
- 27) Melting point of aluminum is in Degree Celsius. (CO₂)
a) 760 b) 860 c) 960 d) 660
- 28) The austenite phase structure has ----- structure. (CO₂)
a) FCC b) BCC c) HCS d) HCP
- 29) The Curie temperature is in Degree Celsius. (CO₂)
a) 768 b) 210 c) 1147 d) 1400
- 30) Completion of cementite to austenite occurs at temperature (CO₂)
a) A₄ b) A_{cm} c) A₂ d) A₃
- 31) Carbon % s in eutectoid steel is (CO₂)
a) < 0.8% b) > 0.8% c) 2% d) 0 %
- 32) Steel is alloy of (CO₂)
a) Iron & Carbide b) Iron & Copper c) Iron & Carbon d) Graphite & Carbon
- 33) A cold Chisel is made from (CO₂)
a) M.S. b) C.I. c) H.S.S. d) H.C.S.
- 34) Hot work tool steel is designated by series. (CO₂)
a) W b) O c) A d) H
- 35) The substance which is dissolved is known as
a) Solute b) Solvent c) Substance d) Mixture
- 36) A homogeneous, physically distinct and mechanically separable is
a) Substance b) Solvent c) Solute d) Phase.
- 37) The substance which is in purest form is
a) Alloy b) Pure metal c) Nonmetal d) Phase
- 38) For pure metal solidification temperature will be

- a) Constant b) Change c) Increase d) Decrease
- 39) In regular solid solution solutes and solvent are
- a) Equal b) Less c) More d) All of above
- 40) Solidification of alloy starts with
- a) Constant temp. b) Change in temp. c) Increase in temp. d) All of above
- 41) A pure metal consists of elements
- a) 2 b) 1 c) 3 d) 4
- 42) Copper and aluminum are examples of
- a) Nonferrous metals b) Ferrous metals c) Both a and b d) None of above
- 43) PVC is example of
- a) Rubber b) Thermosetting plastic c) Thermoplastic d) All of above.
- 44) Sand and Bricks are
- a) Composite b) Polymer c) Metal d) Ceramics.
- 45) Zinc and lead and tin are example of
- a) High M.P. b) Low M.P. c) No M.P. d) None of Above.
- 46) Which one of the harder material from following.
- a) Diamond b) Steel c) Titanium d) Tungsten
- 47) An alloy is having----- Structure.
- a) Homogeneous b) Heterogeneous c) Intermetallic d) All of above
- 48) Which of the following alloy used for making surgical instruments
- a) Steel b) Brass c) bronze d) C.I.
- 49) Cutting tools are made from
- a) HSS b) Medium carbon steel c) HCS d) Copper
- 50) The α ferrite has ----- Structure
- a) BCC b) FCC c) SCS d) HCP
- 51) The α ferrite stage form at -----°C.

- a) 210 b) 768 c) 1500 d) 727
- 52) Austenite Phase having ----- Structure.
- a) FCC b) BCC c) HCP d) SCS
- 53) The austenite phase forms at temperature at -----°C.
- a) 210 b) 1147 c) 1500 d) 1600
- 54) The Delta ferrite stage forms at -----°C.
- a) 210 b) 1147 c) 1500 d) 1600
- 55) Fe₃C (Cementite) forms at -----°C.
- a) 210 b) 1147 c) 1500 d) 1600
- 56) The last stage obtained after heat treatment is
- a) Pearlite b) ferrite c) bainite d) austenite
- 57) Cementite becomes paramagnetic at -----°C.
- a) 210 b) 768 c) 1500 d) 727
- 58) Pearlite turns into austenite at -----°C.
- a) 210 b) 768 c) 1500 d) 727
- 59) Peritectic reaction occurs at -----°C.
- a) 1498 b) 768 c) 1500 d) 727
- 60) Eutectoid reaction occurs at -----°C.
- a) 1498 b) 768 c) 1500 d) 727
- 61) Eutectic reaction occurs at -----°C.
- a) 1498 b) 1148 c) 1500 d) 727
- 62) Carbon content in Hypoectoid steel is
- a) 0.8% b) Between 0.8-2% c) less than 0.8% d) 6.67%
- 63) Carbon content in Hypereutectoid steel is
- a) 6.67% b) Between 0.8-2% c) less than 0.8% d) 0.8%
- 64) The steel is usually consists of chromium up to.

a) 18% b) 4% c) 50% d) 10%

65) High speed tool steel maintains high hardness up to temperature of

a) 500°C b) 550°C c) 600°C d) 650°C

66) ----- Steel has 1.5% carbon and 12% Chromium.

a) OHNS B) HCHC c) HSS d) SS

67) Which steel has high dimensional stability?

a)HCHC b) HSS c) Hot work tool Steel d) cold work tool steel

68) M - series HSS steel contains high amount of

a) Molybdenum b) Tungsten c) Nickel d) Chromium

69) T- series HSS steel contains high amount of

a) Molybdenum b) Tungsten c) Nickel d) Chromium

70) Addition of silicon in steel

a) Increase T.S. b) Act as deoxidizer c) Decrease T.S. d) Abrasion resistance.

71) To increase hardness which alloying element is added?

a) Tungsten b) Manganese c) Carbon d) All of above

72) ----- is used for metal cutting

a) Low carbon steel b) medium carbon steel c) High carbon steel d) superheated steel

73) An engineering hammer is example of

a) C.I. b) M.S. c) Forged steel d) High carbon steel

74) First alloy made by human being is

a) Steel b) Brass c) Bronze d) M.S.

75) Compressive strength is highest in case of

a) C.I. b) M.S. c) Carbon Steel d) High carbon steel.

76) Bronze is alloy of

a) Cu & Ni b) Cu & Fe c) Cu & Tin d) Cu & Al

77) Brass is an alloy of

- a) Ductile cast iron b) Spheroidal cast iron c) Gray cast iron d) Malleable cast iron
- 88) White cast iron is also known as
- a) Chilled cast iron b) Nodular cast iron c) Malleable cast iron d) None of the above
- 89) Machine tools beds are made from _____
- a) White cast iron b) Spheroidal cast iron c) Gray cast iron d) Malleable cast iron
- 90) Carbon content in white cast iron generally varies from -----
- a) 2 to 3.6% b) 1.5 to 2% c) More than 4% d) None of the above
- 91) Carbon content in gray cast iron generally varies from -----
- a) 1.2 to 2.0% b) 2.5 to 3.8% c) 4 to 6.67% d) None of the above
- 92) Annealing of white cast iron results in production of
- a) Ductile cast iron b) Spheroidal cast iron c) Gray cast iron d) Malleable cast iron
- 93) Carbon content in gray cast iron generally varies from -----
- a) 1.2 to 2.0% b) 2.5 to 3.8% c) 4 to 6.67% d) None of the above
- 94) Carbon content in white cast iron generally varies from -----
- a) 2 to 3.6% b) 1.5 to 2% c) More than 4% d) None of the above
- 95) Which of the following impurity in cast iron make it hard and brittle?
- a) Silicon b) Sulphur c) Manganese d) Phosphorus
- 96) Cast iron is produced in
- a) Blast furnace b) Box furnace c) Muffle furnace d) Cupola furnace
- 97) The product of refinement process in cupola is
- a) Stainless steel b) Tools steel c) Cast iron d) Pig iron
- 98) Red hardness of an alloy steel can be improved by adding
- a) Vanadium b) Manganese c) Titanium d) Tungsten