Q.29 Draw and explain cooling curve of a binary alloy. (CO2)

Q.30 What is a solid solution alloy? What are its different types? (CO2)

Q.31 Write the properties of solid solution alloys(any five) (CO3)

Q.32 Write ths uses of plastic (any five) . (CO3)

Q.33 Write the properties of white cast iron. (CO4)

Q.34 Write the purposes of annealing. (CO5)

Q.35 Write any five advantages of composite materials. (CO6)

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Explain tensile test for a specimen of mild steel. (CO1)

Q.37 Explain the concept of plastic and application of thermoplastic and thermosetting plastic. (CO4)

Q.38 Explain the procedure for making parts and components in powder metallurgy. (CO5)

(**Note:** Course outcome/CO is for office use only)

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Mechanical Engineering
Subject:- Material Science

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 The property which resists penetration of other metals is called (CO1)

a) Ductility b) Hardness
c) Toughness d) Melleability

Q.2 The value of co-ordination number for simple cubic structure is (CO1)

a) 6 b) 8
c) 12 d) 14

Q.3 The ability of the material to deform without breaking is called. (CO2)

a) Plasticity b) Ductility
c) Brittleness d) None of these

Q.4 There are six atoms in a unit cell of (CO2)

a) B.C.C structure b) F.C.C structure
c) H.C.P structure d) None of these

Q.5 Plastic deformation may take place due to (CO2)

a) Slip only b) Twinning only

c) Slip or twinning d) None of these

Q.6 Fatigue results in (CO3)

a) Brittle fracture b) Ductile fracture

c) Elongation d) None of these

Q.7 A physically homogeneous distinct portion of a system is called (CO3)

a) Phase b) Component

c) Constituent d) All of these

Q.8 Coal used is cupola is (CO4)

a) Charcoal b) Coke

c) Cooking coal d) None of these

Q.9 The best quality of steel is produced in (CO4)

a) Cupola b) Bessemer

c) Induction furnace d) Open hearth furnace

Q.10 Y-alloy is an alloy of (CO5)

a) Aluminium b) Copper

c) Magnesium d) Lead

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Define density of material. (CO1)

Q.12 Define ferrous metal. (CO1)

Q.13 Name any two non ferrous metals. (CO1)

Q.14 Define hardness of material. (CO2)

Q.15 Define a crystalline solid. (CO2)

Q.16 Name two amorphous solids. (CO2)

Q.17 Define unit cell. (CO3)

Q.18 Ferrite contains_____carbon. (CO3)

Q.19 Define hardness. (CO5)

Q.20 Define plastic. (CO6)

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Give the classification of materials. (CO1)

Q.22 Write the uses of bio-material. (CO1)

Q.23 Write the advantages of semi-conductors. (CO1)

Q.24 Differentiate between ferrous metals and non-ferrous metals. (CO2)

Q.25 Name seven crystal system. (CO2)

Q.26 Differentiate between ferrous metals and non-ferrous metals. (CO1)

Q.27 Define deformation. What are its types? (CO1)

Q.28 Differentiate between elastic and plastic deformation. (CO2)