Q.26 What are the desirable properties of Spring Steel? (CO3)

Q.27 Write the uses of bio-materials. (CO1)

Q.28 Differentiate between slip and twinning. (CO2)

Q.29 Write the uses of Aluminium. (CO3)

Q.30 Write the properties of malleable cast iron. (CO3)

Q.31 What are the Bearing Materials. Classify them. (CO1)

Q.32 Give the classification of materials. (CO1)

Q.33 Write a short note on heat insulating materials. (CO1)

Q.34 Derive an expression for the atomic radius of body centred cubic structure. (CO2)

Q.35 Give the classification of composite materials. (CO6)

SECTION-D

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

Q.36 Write the properties and uses of Asbestos, Glass wool and Thermocole. (CO7)

Q.37 What is alloy steel. What are its different types? Explain briefly. (CO3)

Q.38 What is heat treatment furnace? What are is different types? Explain any two.

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2nd Sem / Mech. Engg. (MSIL)
Subject:- Materials and Metallurgy

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) Malleability

Q.2 The property of material by virtue of which is can be rolled into thin sheet is called (CO1)

a) Malleability b) Ductility
c) Plasticity d) Toughness

Q.3 There are four atoms in a unit cell of (CO2)

a) B.C.C structure b) F.C.C structure
c) H.C.P. structure d) S.C structure

Q.4 Crystal structure of zinc is (CO2)

a) B.C.C b) F.C.C
c) H.C.P d) S.C.

Q.5 Which of the following is an alloy? (CO3)

a) Gold b) Silver
c) Aluminium d) Brass

Q.6 Corrosion resistance of steel is increased by the addition of (CO3)
a) sulphur b) chromium
c) tungsten d) none of the above

Q.7 Plastics are (CO5)
a) semi conductors
b) good conductors of heat and electricity
c) bad conductors of heat and electricity
d) bad conductors of heat and good conductors of electricity

Q.8 In annealing process of heat treatment, cooling of steel is carried out in (CO4)
a) air b) oil
c) furnace d) None of the above

Q.9 The purest form of iron is (CO7)
a) Pig iron b) Cast iron
c) Steel d) Wrought iron

Q.10 Ceramics are (CO6)
a) opaque
b) transparent
c) opaque as well as transparent
d) None of the above

SECTION-B

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

Q.11 Define co-ordination Number (CO1)

Q.12 Give two examples of amorphous solid. (CO2)

Q.13 Define alloy. (CO3)

Q.14 Name any four non-ferrous metals. (CO3)

Q.15 What is diffusion annealing. (CO4)

Q.16 What is the percentage of carbon in cast iron? (CO6)

Q.17 Define Annealing. (CO4)

Q.18 Define thermosetting plastics. (CO5)

Q.19 Write the composition of 18-4-1 high speed steel. (CO4)

Q.20 Define alloy steel. (CO3)

SECTION-C

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

Q.21 Write the advantages of semi-conductors. (CO1)

Q.22 Define Plastics. Explain different type of Plastics. (CO5)

Q.23 What are the Refractory Materials. Write the properties of dolomite bricks. (CO7)

Q.24 Write the uses of grey cast iron. (CO3)

Q.25 Write the purposes of hardening. (CO4)