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4th Sem / Auto. Mech, Prod, T&D, GE, CAD/CAM, CNC, Metallurgy, Found. & Forg., Adv. Mauf. Tech., Mech Engg (Fabrication Tech), Mech Engg (CAD/ CAM Dsgn & Robotics)

Subject:- Materials and Metallurgy / Mat. Sci

Time : 3Hrs. M.M. : 100

SECTION-A

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

- Q.1 The value of Co-ordination number for BCC is
a) 6 b) 8
c) 12 d) 14

Q.2 Cast iron has property of
a) Ductility b) Plasticity
c) Brittleness d) Malleability

Q.3 A Steel with 0.8% carbon and 100% Pearlite is
a) Eutectoid Steel
b) Hypo-eutectoid Steel
c) Hyper-eutectoid Steel
d) None of the above

Q.4 The important use of Bakelite is in the manufacturing
is

Q.7 Plastic deformation may take place due to
a) Slip only b) Twinning only
c) Slip or Twinning d) None of the above

Q.8 The Purest form of Iron is
a) Pig Iron b) Cast Iron
c) Steel d) Wrought Iron

Q.9 Ferrite contains _____ carbon
a) 0% b) 0.8%
c) 0.08% d) 6.67%

Q.10 Which plastic is used in optical Application?
a) Polystyrene b) Polyvinyl Chloride
c) A.B.S d) Epoxy

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SECTION-B

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

Q.11 T.T.T stands for _____

Q.12 Define Component of a solution

Q.13 What is Carbon Percentage of high Carbon Steel?

Q.14 Name any two non-ferrous metals.

Q.15 Write the application of Carburizing.

Q.16 Name the nuclear energy metals.

Q.17 Define alloy.

Q.18 Define Atomic Packing factor.

Q.19 Classify Iron.

Q.20 A steel with carbon _____ is called hypoeutectic Steel.

SECTION-C

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

Q.21 What is a Smart Material? Explain its types.

Q.22 Classify heat treatment Furnace.

Q.23 List the properties of Stainless Steel.

Q.24 Define any five mechanical properties of material.

Q.25 Define the term Slip with neat diagram.

Q.26 How will you classify material?

Q.27 What is a Bessemer process? Explain with neat Diagram.

Q.28 Explain Allotropic forms of Iron.

Q.29 What is a food grade Plastic? Explain its different codes.

Q.30 Differentiate between Metals and non-Metals.

Q.31 Define Cast Iron also Explain its types.

Q.32 Explain the following:-

a) Glass Wool

b) Semi - Continuous furnace

Q.33 Write a short note on Normalizing.

Q.34 Derive Atomic Radius for Body centered cubic structure.

Q.35 Explain Cooling Curve of Binary Alloy.

SECTION-D

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

Q.36 Draw a neat labeled Sketch of Iron - Carbon diagram.

Q.37 Define stainless steel. Explain types of stainless steel.

Q.38 Define raw material of Iron and Steel. Classify Basic Process of Iron making and Steel making.