

No. of Printed Pages : 4
Roll No.

**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

- a) Cloth b) Cables
c) Electrical Switches d) Hosepipes

- Q.5 Glass wool is:-
- a) Good insulator of heat
 - b) Good insulator of electricity
 - c) Not affected by moisture
 - d) All of the above
- Q.6 Which of the following is an alloy?
- a) Cast Iron
 - b) Steel
 - c) Brass
 - d) All of the above
- 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

(1) 180342/120342/030342
/030433/441/084542
/105242/094751

(2) 180342/120342/030342
/030433/441/084542
/105242/094751

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?

(3) 180342/120342/030342
/030433/441/084542
/105242/094751

- 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.

(2940)

(4) 180342/120342/030342
/030433/441/084542
/105242/094751