

- Q.27 Define Plastic coatings & various methods used for coating
- Q.28 Write a short note on heat insulating materials with examples
- Q.29 Define Ceramics ? Also list their properties and applications
- Q.30 Name few properties and uses of Glasswool
- Q.31 Write a short note on Nuclear materials
- Q.32 Explain in brief Refractory materials
- Q.33 Name few mechanical and thermal properties of various materials
- Q.34 Explain in brief types of crystal structures
- Q.35 Explain in brief properties and uses of Copper

#### **SECTION-D**

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

- Q.36 Explain Iron carbon diagram with neat sketch
- Q.37 Explain few methods of manufacturing of Steels with diagram
- Q.38 Write a short note on any two:
- Heat treatment furnaces
  - Thermoplastic and thermosetting
  - Non ferrous metals

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**4th Sem / Mech. Engg. (MSIL)  
Subject:- Material and Metallurgy**

Time : 3Hrs.

M.M. : 100

#### **SECTION-A**

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

- Q.1 Corrosion is
- Decay of metal due to reaction with environment
  - both (a) and ©
  - accumulation of metal
  - None of above
- Q.2 Solder is an alloy of
- Tin and lead
  - aluminium and copper
  - Copper and Zinc
  - None of above
- Q.3 Aluminium, copper and gold have \_\_\_\_\_ type of structure
- S.C
  - F.C.C
  - B.C.C
  - All of the above
- Q.4 Fatigue results in
- elongation
  - brittle fracture
  - ductile fracture
  - crack formation

- Q.5 Pig iron is produced from furnace known as  
a) Blast furnace      c) open hearth furnace  
b) Puddling furnace    d) None of the above
- Q.6 The purest form of iron is  
a) cast iron            c) steel  
b) wrought iron        d) None of the above
- Q.7 Bauxite is the ore of  
a) Copper              c) Lead  
b) aluminium          d) none of these
- Q.8 Nitrogen is introduced in steel by passing ammonia gas through muffle furnace is the process known as  
a) Carburizing        c) Nitriding  
b) Cyaniding          d) None of these
- Q.9 Trade name of polytetrafluoroethylene (PTFE) is  
a) Beetle              c) teflon  
b) Bakelite            d) None of these
- Q.10 Concrete is an example of  
a) particle reinforced composite  
b) Structured composite  
c) fibre reinforced composite  
d) All of the above

## SECTION-B

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

- Q.11 Name few examples of biomaterials.  
Q.12 Name any one cutting tool material.  
Q.13 Define FCC crystal structure  
Q.14 What is Creep  
Q.15 Name any two non ferrous metals  
Q.16 Name any one iron ore  
Q.17 Give an example of bearing metals  
Q.18 Name few allotropic forms of iron  
Q.19 Define thermosetting plastic  
Q.20 Name few types of steel

## SECTION-C

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

- Q.21 Classify engineering materials in brief.  
Q.22 Define fracture and its types  
Q.23 Explain flow diagram for production of iron and steel  
Q.24 Explain types of Cast iron with its usage.  
Q.25 What is the purpose of Heat treatment.  
Q.26 Define Nitriding and cyaniding.