

- Q.27 Define Plasting 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 Asbestos
- 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 crystals structures
- Q.35 Explain in brief type of Heat treatment furnances.

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 Define Composites material? Explain its types along with its applications
- Q.38 Write a short note on any two:
- Tool and die materials
 - Thermoplastic and thermosettings
 - Non ferrous metals

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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 Corrosion is
- Decay of metal due to reaction with environment
 - Both (a) and (c)
 - accumulation of metal
 - None of above
- Q.2 Brass is an alloy of
- Tin and lead
 - aluminum and copper
 - Copper and Zinc
 - None of above
- Q.3 Gold has _____ type of structure
- S.C
 - B.C.C
 - F.C.C
 - All of the above

- Q.4 Fatigue results in
 a) elongation c) ductile fracture
 b) brittle fracture d) crack formation
- Q.5 Cast iron is produced from furnace known as
 a) Blast furnace c) open hearth furnace
 b) Cupola furnace d) None of the above
- Q.6 The impurest form of iron is
 a) cast iron c) pig iron
 b) Wrought iron d) None of the above
- Q.7 Copper pyrite is an ore of
 a) Copper c) cast iron
 b) aluminium d) all of these
- Q.8 Nitrogen is introduced in steel in 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 Ply board 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 Define biomaterials
 Q.12 Name any one semiconducting material.
 Q.13 Define hcp crystal structure
 Q.14 What is fatigue
 Q.15 Name any two non ferrous metals
 Q.16 Name any one iron ore
 Q.17 Give an example of white metals
 Q.18 Name few sources of plastics
 Q.19 Define thermosetting plastic
 Q.20 Define bearing metals

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 Explain deformation 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 purpose of Heat treatment
 Q.26 Define case hardening and its types in brief