



- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Diagrams and chemicals equations should be given wherever necessary.
 5. Illustrate your answer necessary with the help of neat sketches.
 6. Discuss the reaction, mechanism wherever necessary.
 7. Cell Phone is not allowed.

SECTION - A

1. a) State and explain important mechanical properties of metals. 7
b) Explain the casting of an alloy ? Why alloys are produced ? 6

OR

2. a) Explain in details elastic deformation and plastic deformation of metals. 7
b) Explain the salient features of extrusion technique used for processing of metals. 6
3. a) What are the various types of stainless steels and discuss their applications. 7
b) How is cast iron pure produced ? Explain the salient features of process. 6

OR

4. a) Why heat treatment of metals is necessary ? Explain the various heat treatment techniques. 7
b) What do you mean by special steels ? How are they produced ? 6
5. a) Explain in details the important applications of lead in process plants. 7
b) What are thermoplastics and thermosetting plastics ? State some examples. 7

OR

6. a) What do you mean by crystallinity of a polymer ? What are the advantages of crystalline polymers ? 7
b) How are composites produced ? Explain their advantages and applications. 7

SECTION - B

7. a) Explain the importance of curing of cement concrete ? 7

- b) What are the main raw materials of cement production ? Explain the importance of calcination. 6

OR

8. a) Explain the difference between glass and ceramic. State their applications. 7
b) How is cement produced ? Explain the meaning of prestressed concrete. 6
9. a) How corrosion is developed in process equipments ? Explain its mechanism. 7
b) What are the different corrosion prevention techniques ? Explain in details. 6

OR

10. a) What are the various theories of corrosion proposed ? Explain any one in details. 7
b) What is electrochemical corrosion ? Explain in details. 6
11. a) What are the advantages of lining and coating of process equipments ? 7
b) How is rubber lining carried out ? and for what type of applications it is preferred ? 7

OR

12. a) How will you make a choice between ferrous, non ferrous and polymeric materials ? Explain. 7
b) What are epoxy coatings ? How such coatings are carried out ? 7
