



- Notes :
1. All questions carry marks as indicated.
 2. Solve Question 1 OR Questions No. 2.
 3. Solve Question 3 OR Questions No. 4.
 4. Solve Question 5 OR Questions No. 6.
 5. Solve Question 7 OR Questions No. 8.
 6. Solve Question 9 OR Questions No. 10.
 7. Solve Question 11 OR Questions No. 12.
 8. Due credit will be given to neatness and adequate dimensions.
 9. Assume suitable data whenever necessary.
 10. Diagrams and chemical equations should be given whenever necessary.
 11. Illustrate your answers whenever necessary with the help of neat sketches.
 12. Use of non – programmable calculator is permitted.

1. a) What are various types of patterns? Which patterns are used for mass production of casting & why? 7

b) What are the main constituents of molding sand? State their roles. 6

OR

2. a) What is core? What are the ingredient of coring sand? State the properties of good coring sand? 7

b) Explain the advantages of bottom gating system over top gating system. 6

3. a) Draw neat sketch of Gating system. Explain each part of gating system, with their role in getting the sound castings. 7

b) What is top gating system? Draw & explain various types of top gating system. 6

OR

4. a) What is pressure die casting? Explain in detail hot chamber die casting method. State its applications. 7

b) Discuss the process of shell molding, stating the raw material required & various steps involved in production of sound casting. 6

5. a) What are the different flames obtained in oxy-acetylene gas welding? Explain. 6

b) Differentiate between 8

i) TIG & MIG

ii) Plasma Arc welding and Hydrogen welding.

iii) DCEP & DCEN.

OR

6. a) What is meant by Resistance welding? Explain in detail, working principle of spot welding. 7
- b) Which welding process you will select for joining of thick metal plates over 100mm thickness? Justify for your selection. 7
7. a) Differentiate completely between 6
- i) Hot working and Cold working of metals.
- ii) Open die forging and closed die forging.
- b) Explain the 'Rolling process' with neat sketch indicating various zone angles. 7

OR

8. a) Explain the working principle of forging process. Differentiate between forging hammers & forging press. 7
- b) How does direct extrusion differ from indirect extrusion? Discuss their relative merits and demerits. 6
9. a) Explain the "Press Terminology" and its various elements with neat sketch. 7
- b) Explain the following die cutting operation 6
- i) Punching. ii) Trimming.
- iii) Slitting. iv) perforating.

OR

10. a) What are press working dies? Explain at least four types of dies in detail, with the help of sketches. 7
- b) Explain the classification of press on the basis of source of power. 6
11. a) How plastics are classified? Differentiate between thermoplastics & thermosetting plastics? 7
- b) Describe the method which is suitable for the manufacturing of plastic bottles/toys with neat sketch. 7

OR

12. a) Explain screw injection molding process with the help of neat sketch. 7
- b) Write short notes on. 7
- i) Slush molding. ii) Calendaring
- iii) Compression moulding. iv) Vacuum molding.
