



- Notes :
1. All questions carry equal marks.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Illustrate your answers wherever necessary with the help of neat sketches.
 5. Attempt Q. 1 or Q. 2, Q. 3 or Q. 4, Q. 5 or Q. 6, Q. 7 or Q. 8, Q. 9 or Q. 10.

1. a) Write the factors affecting the tool life. What are the differences between orthogonal cutting and oblique cutting? 8

b) List out the types of chips? What are the sources of heat generation in machining? 8

OR

2. a) Explain the action of cutting fluids. Enumerate the types of cutting fluids and mention the composition and applications any three types in brief. 8

b) Define Metal Cutting. What are the important characteristics of materials used for cutting tools? How do you define tool life? 8

3. a) List out the factors to consider for selecting pattern material. What are the different types of pattern? What are the pattern making allowances? 8

b) Explain in detail centrifugal casting. 8

OR

4. a) Enlist properties of molding sand and describe the green sand molding process in detail. 8

b) What are the causes of blow holes in castings and how they can be Minimized during casting operations? 8

5. a) Compare and contrast between Hot working and Cold working in detail. 8

b) Explain how direct extrusion differs from indirect extrusion? Discuss their relative merits and demerits. 8

OR

6. a) Explain the following cold working processes. 8
i) Cold rolling ii) Cold honbbing

b) What do you understand by the term 'forging'? How does 'hand forging' differ from 'machine forging'? 8

7. a) Differentiate between Soldering and Brazing? List out merits, demerits. 8
- b) Explain the following with neat sketches- 8
- i) Shielded metal arc welding.
- ii) Forge welding

OR

8. a) What are the advantages and disadvantages of welding over other manufacturing processes? 8
- b) Explain different welding defects, their causes and remedies. 8
9. a) Explain the abrasive water jet machining process with a schematic diagram. 8
- b) With the help of neat sketch explain how the MRR changes with the grit size of abrasives? 8
- What the functions of dielectric fluid in EDM process?

OR

10. a) Explain Electro discharge Machining process with a neat sketch. 8
- b) Explain Ultrasonic Machining process with a neat sketch. 8
