

B.E. / B.Tech. Mechanical Engineering (Model Curriculum) Semester-V  
**PCCME303 / MAN1 - Manufacturing Processes**

P. Pages : 2

Time : Three Hours



**GUG/S/25/14070**

Max. Marks : 80

- 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. Solve 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) Discuss: Thermal aspect in metal cutting. 8
- b) What are the sources for heat generation in machining? 8

**OR**

2. a) What is a cutting fluid? What are the functions of cutting fluids? What are the requirements of a cutting fluid? 8
- b) Define Metal Cutting. What are the important characteristics of materials used for cutting tools? 8
3. a) Give a detailed classification of casting processes and explain the concept of Investment casting. 8
- b) What are the advantages and disadvantages of casting processes? 8

**OR**

4. a) What is a backing sand? How molding sand is prepared? Which are the additives and binders used in preparing molding sand? 8
- b) Enlist properties of molding sand and describe the green sand molding process in detail. 8
5. a) Explain how direct extrusion differs from indirect extrusion? Discuss their relative merits and demerits. 8
- b) What do you understand by hot working processes? 8

**OR**

6. a) Explain the following processes: 8
- i) Impact extrusion
- ii) Bending
- b) Explain forging. Give advantages and disadvantages of forging. 8

7. a) Explain MIG welding process with a neat sketch. 8
- b) Explain in detail die casting process. 8

**OR**

8. a) Explain different welding defects, their causes and remedies. 8
- b) Give the advantages and limitations of Oxy-acetylene Gas welding. Explain the flame characteristics of gas welding process with a neat sketch. 8
9. a) Explain the reasons for the development of Unconventional Machining Process. Discuss about the criteria recommended in selection of these processes. 8
- b) Explain Electro discharge Machining process with a neat sketch. 8

**OR**

10. a) Explain the abrasive water jet machining process with a schematic diagram. 8
- b) Make a comparison between traditional and unconventional machining processes in terms of cost, application, scope, Machining time, advantages and limitations. 8

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