

B.E. Mechanical Engineering (Model Curriculum) Semester-V
PCCME303 - Manufacturing Processes

P. Pages : 2

Time : Three Hours



GUG/W/23/14070

Max. Marks : 80

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- 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. Diagrams and Chemical equation should be given wherever necessary.
 5. Illustrate your answers wherever necessary with the help of neat sketches.
 6. 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) List out the types of chips? What are the sources of heat generation in machining? 8
- b) Write the factors affecting the tool life. What are the differences between orthogonal cutting and oblique cutting? 8

OR

2. a) Define Metal cutting. What are the important characteristics of materials used for cutting tools? How do you define tool life? 8
- b) Explain the action of cutting fluids. Enumerate the types of cutting fluids and mention the composition and applications for any three types in brief. 8
3. a) Give a detailed classification of casting processes. 8
- b) Enlist various types of patterns and explain briefly with neat sketches any three of them. 8

OR

4. a) What are the causes of blow holes in castings and how they can be Minimized during casting operations? 8
- b) Enlist properties of molding sand and describe the green sand molding process in detail. 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 hobbing.
- 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 and application of these two processes. **8**
- b) Explain the following with neat sketches". **8**
- i) Shielded metal arc welding.
- ii) oxy- acetylene Gas welding.

OR

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

OR

10. a) Explain electro discharge machining process with a neat sketch. **8**
- b) Explain ultrasonic machining process with a neat sketch. **8**
