

00115

**DIPLOMA IN ELECTRICAL AND
MECHANICAL ENGINEERING**

Term-End Examination

June, 2010

BME-051 : MANUFACTURING PROCESSES – I

Time : 3 hours

Maximum Marks : 70

Note : Answer any seven questions.

1. (a) Make a list of all manufacturing processes you have studied. 4
- (b) Explain the processes of plain turning and taper turning on lathe. 4
- (c) Find the conicity of a workpiece whose larger diameter $D = 80$ mm and smaller diameter $d = 70$. The job tapers over a length of 100 mm. 2
2. (a) Sketch a fluted drill and explain what function does the flute perform. 5
- (b) What are the different processes that can be performed in a drill press ? 5

3. (a) Sketch a boring machine and describe processes that are performed in this machine. 6
- (b) What is a vertical turret lathe? Differentiate between vertical turret lathe and standard vertical boring machine. 4
4. Describe a machine that can produce a flat surface of small area. In such a machine you set the tool such that it begin to move about 15 mm before it cuts and continues to move about 8 mm after cut is finished. Why? 10
5. (a) Distinguish between a shaper and planer. 5
- (b) Describe the tools used in planer. 5
6. (a) Sketch a column and knee type horizontal milling machine and name its parts. 7
- (b) How is a T-slot machined in a milling machine? 3
7. (a) What materials are used in making patterns? Mention the types of pattern. 5
- (b) What is a core and in which sand it is made? Describe strickle type of core box. 3+2

8. Describe the types and properties of moulding sand. Describe tests for any two properties. 3+4+3
9. Describe a cupola, showing various zones in cupola when the charge is melting. 10
10. (a) In which machines dividing head or indexing centre is used? Which machine parts are machined by mounting them on dividing head? 5
- (b) Why are tapers used in some machine parts? What are standard tapers? 5
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