

**DIPLOMA IN
MECHANICAL ENGINEERING (DME)**

Term-End Examination

December, 2013

BME-051 : MANUFACTURING PROCESSES – I

Time : 3 hours

Maximum Marks : 70

Note : Answer any five questions. All questions carry equal marks. Use of scientific calculator is permitted.

1. (a) Explain different turning operations that can be done on a Lathe. 7
(b) Explain eccentric turning process with neat sketch. 7
2. (a) What are the different taper turning methods and explain the swivelling compound rest method with figure ? 9
(b) A shaft of diameter 80 mm and 275 mm length is to be turned on a lathe. For a length of 100 mm taper turning is to be done with swivelling compound rest method and smallest diameter on the tapered end of the shaft is 20 mm. Determine the angle at which the compound rest will be swivelled. 5
3. What are the different operations that can be performed in a drilling machine ? Explain with figures. 14

4. Classify the boring machines and describe various boring operations with the help of sketches. 14
5. (a) What is cutting speed, feed and depth of cut in shaper ? 7
(b) Find the number of double strokes per minute for the following data “
Cutting speed = 10 m/min
Length of the stroke = 200 mm.
Ratio of Return time to cutting time. = 2 : 3 7
6. (a) Sketch a slotting machine and mark all parts and explain. 9
(b) Describe the operation of cutting T-slots on a shaper. 5
7. (a) Draw a neat sketch of a column and knee type milling machine and functions of its parts. 8
(b) Explain the following milling operations : 6
(i) Slab milling
(ii) Angular milling
(iii) Profile milling
8. (a) What are the different types of gates used in sand mould ? Explain in brief. 8
(b) What are the different types of moulding processes ? Explain any moulding process. 6
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