

**DIPLOMA IN MECHANICAL ENGINEERING
(DME)**

Term-End Examination

December, 2016

BME-051 : MANUFACTURING PROCESSES - I

Time : 2 hours

Maximum Marks : 70

Note : Answer any five questions. All questions carry equal marks. Assume missing data, if any. Use of scientific calculator is permitted.

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1. (a) Explain the following lathe operations with suitable diagram : 10
- (i) Straight Turning
- (ii) Facing
- (b) Find the taper per inch and the taper per foot length, if the diameters of the taper are $\frac{5}{8}$ inch and $\frac{3}{8}$ inch, and the length of the taper is $3\frac{1}{4}$ inch. 4
2. (a) Explain the method of Taper Turning by swivelling the compound rest. 7
- (b) Explain the method of Eccentric Turning with suitable diagram. 7

3. (a) Draw the schematic diagram of a Drilling Machine showing all parts. 8
- (b) Explain the following operations : 6
- (i) Lapping
- (ii) Grinding
- (iii) Trepanning
4. (a) How are the boring machines classified ?
Explain the Vertical Boring machine. 7
- (b) What are the different shaping operations ?
Explain the machining of Angular surface. 7
5. (a) In a shaper work, the length of stroke is 200 mm, number of double strokes per minute is 30 and the ratio of return time to cutting time is 2 : 3. Find the cutting speed. 4
- (b) Draw the diagram of a Slotting Machine and show its parts. 10
6. (a) What are the different planer operations ?
Explain any one of them. 8
- (b) What are the differences between shaper and planer ? 6

7. (a) Explain the following : 8
- (i) Angular milling
 - (ii) Gang milling
 - (iii) Gear cutting
 - (iv) Face milling
- (b) Explain thread milling operation with neat diagram. 6
8. (a) What are the different types of patterns ?
Explain Gated pattern with diagram. 7
- (b) Write the colour coding of patterns. 3
- (c) Explain any two types of Core Boxes. 4
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