

**DIPLOMA IN
MECHANICAL ENGINEERING**

Term-End Examination

December, 2010

02169

BME-051 : MANUFACTURING PROCESSES—I

Time : 3 hours

Maximum Marks : 70

Note : Attempt any seven questions.

1. (a) What do you understand by 'Rough' and 'Finish' turning ? How are they done ? 5
- (b) State the principle of working in a lathe. Explain the process of threading operation. 5
2. (a) What 'Standard' tapers are commonly used ? Describe in brief. 5
- (b) How many ways taper turning is possible in a lathe ? What are the limitations of Setover method ? 3
- (c) Determine the value of conicity of taper job having the length of taper as 200 mm with larger diameter of 100 mm and smaller diameter of 80 mm. 2

3. (a) What is a 'twist drill' ? Describe briefly the common forms of parallel shank twist drill. 5
- (b) What do you understand by terms 'drilling', 'reaming' and 'boring' ? How do they differ from each other ? 5
4. (a) With the help of a neat diagram, describe the working of a vertical turret lathe. 5
- (b) Name the vertical boring operations and explain any four operations. 5
5. (a) Differentiate between a shaper and a slotter. 4
- (b) In machining a job on a shaper, the length of the stroke is 180 mm, number of double strokes per minute is 30 and the ratio of return time to cutting time is 2 : 3. Calculate the cutting speed. 3
- (c) How can you machine flat surfaces in a slotting machine ? 3
6. (a) What are the common operations performed on a shaper ? Describe any two of them with the help of a neat sketch. 6
- (b) Describe tools used in shaper and their materials. 4

7. (a) Describe planer tools and their materials. 6
(b) State the terms cutting speed, feed and depth of cut in case of a planing machine. 4
8. (a) Sketch and describe the following milling operations : 6
(i) Side Milling.
(ii) Face Milling.
(iii) End Milling.
(b) Differentiate between up milling and down milling. 4
9. (a) What are the different types of patterns commonly used ? Explain solid pattern and sweep pattern. 6
(b) Define a core print. State the different types of core prints. 4
10. (a) Discuss the different types of moulding sand. 6
(b) What are risers ? Explain in brief the use of padding and chills. 4
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