

**B.Tech. – VIEP – MECHANICAL ENGINEERING
(BTMEVI)**

Term-End Examination

00892

December, 2017

BIME-014 : PRODUCTION TECHNOLOGY – II

Time : 3 hours

Maximum Marks : 70

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

1. (a) Briefly explain the working principles of turret and capstan lathe. 7
- (b) Why are rake and clearance angles provided on cutting tools ? What factors do the values of these angles depend upon ? 7
2. (a) Explain the difference between a push cut shaper and a pull cut shaper with the help of a simple sketch. Explain the quick return mechanism of a shaper. 7
- (b) In a shaper work, the length of stroke is 200 mm, the number of double strokes per minute is 30 and the ratio of return time to cutting time is 2 : 3. Find the cutting speed. 7

3. (a) Discuss the common work holding devices used on shapers, slotters and planers. 7
- (b) Sketch and describe the essential elements of a twist drill. How are drill sizes designated? 7
4. (a) How are drilling machines classified? Explain briefly the radial drilling machine with the help of a neat sketch. 7
- (b) What do you mean by boring and counter boring? Why is it often necessary to bore a hole? 7
5. (a) Explain the working of a plain column and knee type milling machine. 7
- (b) Describe the various types of abrasives. What are the differences between wheel dressing and wheel truing? 7
6. (a) What are the advantages, limitations and applications of boring? 7
- (b) Enumerate the various reasons for the popularity of CNC controlled production machine tools. 7
7. (a) List the most common part programming languages. Describe any two of them in brief. 7
- (b) Describe the working principle of a CNC machine with the help of a block diagram. 7

8. Write short notes on any **four** of the following : $4 \times 3 \frac{1}{2} = 14$

- (a) Face Milling
 - (b) Turning Centre
 - (c) NC Machine
 - (d) APT Programming
 - (e) Centreless Grinding Machine
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