

# CBCS Scheme

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## Fourth Semester B.E. Degree Examination, Dec.2017/Jan.2018 Manufacturing Process - II

Time: 3 hrs.

Max. Marks: 80

Note: Answer any FIVE full questions, choosing one full question from each module.

### Module-1

- 1 a. With suitable sketches, explain different types of chips produced during machining. (06 Marks)
- b. The following data refer to an orthogonal cutting process. Chip thickness 0.62mm feed 0.2mm, rake angle  $15^\circ$ . Calculate chip reduction co-efficient and shear angle. (05 Marks)
- c. Define tool life and list the factors that affect tool life. (05 Marks)

OR

- 2 a. What are the desirable properties or characteristics of cutting tool material and list the different cutting tool materials? (08 Marks)
- b. List the various methods of measuring chip – tool interface temperature. Explain briefly tool – work thermocouple method of measuring it. (08 Marks)

### Module-2

- 3 a. With a neat sketch, explain the constructional features of a Capstan lathe. (10 Marks)
- b. Differentiate between Turret lathe and Capstan lathe. (06 Marks)

OR

- 4 a. How Shapers are classified? Explain briefly “Quick Return Mechanism” used in shaper, with neat sketch. (10 Marks)
- b. Differentiate between Shaper and Planer. (06 Marks)

### Module-3

- 5 a. With a neat sketch, explain the constructional features of horizontal milling machine. (10 Marks)
- b. Differentiate up milling and down milling, with a neat sketch. (06 Marks)

OR

- 6 a. With a neat sketch, explain clearly the construction and working principle of cylindrical grinding machine. (10 Marks)
- b. List the various grinding wheel abrasives and bonding processes. (06 Marks)

### Module-4

- 7 a. With a neat sketch, explain clearly the construction and working principle of Radial drilling machine. (10 Marks)
- b. With suitable sketches, explain the following operations using drilling machine : (06 Marks)
- i) Tapping      ii) Counter boring.

OR

- 8 a. Briefly explain the honing process with a neat sketch. State its advantages and disadvantages. (08 Marks)
- b. With a neat sketch, explain the Lapping process. State its advantages and disadvantages. (08 Marks)

**Module-5**

- 9 a. Explain the working principle and operation of Laser Beam machining (LBM) with a neat sketch. State its advantages and disadvantages. (08 Marks)
- b. Explain with neat sketch, Plasma Arc Machining (PAM). Give its merits and demerits. (08 Marks)

**OR**

- 10 a. With the help a neat diagram, explain construction and working principle of Ultrasonic Machining (USM). (08 Marks)
- b. Sketch and explain the principle and operation of Abrasive Jet Machining (AJM). Give its merits and demerits. (08 Marks)

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