CBCS Scheme

USN | | | | | | | | | | 15AU46

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.*

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.

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 15^0. 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 :
i) Tapping ii) Counter boring. **(06 Marks)**

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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