



# CBCS SCHEME

18AU45

Fourth Semester B.E. Degree Examination, Dec.2024/Jan.2025

## Manufacturing Process – II

Time: 3 hrs.

Max. Marks: 100

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

### Module-1

- 1 a. Explain the nomenclature of single point cutting tool. (06 Marks)  
b. Discuss the mechanism and types of chip formation. (08 Marks)  
c. Draw Merchant's circle diagram and state the assumptions made in establishing the relationship among the various forces. (06 Marks)

OR

- 2 a. Explain the properties and types of cutting tool materials. (10 Marks)  
b. Briefly explain the factors affecting heat generation. (10 Marks)

### Module-2

- 3 a. Draw the tool layout for producing a hexagonal headed bolt or a caster lathe from a hexagonal bar stock. Assume the dimensions. (10 Marks)  
b. Differentiate between capstan and Turret lathe. (06 Marks)  
c. Explain the following lathe operations : (04 Marks)  
i) Turning ii) Facing

OR

- 4 a. With a neat sketch, explain the fundamental parts of a horizontal shaping machine. (10 Marks)  
b. Explain the construction and working principle of a planing machine with a neat sketch. (10 Marks)

### Module-3

- 5 a. Define Milling. With a neat sketch explain vertical milling machine. (10 Marks)  
b. Explain the milling operations with a neat sketch. (10 Marks)

OR

- 6 a. With a neat sketch, explain the centreless grinding machine. (10 Marks)  
b. Explain the grinding process parameters. (10 Marks)

### Module-4

- 7 a. Briefly, explain the radial drilling machine with a neat sketch. (10 Marks)  
b. Explain the drill bit nomenclature. (10 Marks)

OR

- 8 a. List out the applications, advantages and disadvantages of broaching machine. (10 Marks)  
b. Explain the lapping and honing operations. (10 Marks)

### Module-5

- 9 a. With neat sketch, explain the laser beam machining. (10 Marks)  
b. Explain the abrasive jet machining with a neat sketch. (10 Marks)

OR

- 10 a. Explain the electron beam machining with a neat sketch. (10 Marks)  
b. With a neat sketch, explain the plasma arc machining. (10 Marks)

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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.