

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

September / October 2023 Supplementary Examinations

Programme: B.E.

Branch: Mechanical Engineering

Course Code: 19ME4DCMFT / 15ME4DCMTM

Course: Manufacturing Technology / Machine Tools and Machining

Semester: IV

Duration: 3 hrs.

Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

- 1 a) Discuss with a neat sketch the nomenclature of a single point cutting tool? **08**
- b) Solve for an orthogonal cutting operations, a chip length of 80 mm was obtained from an uncut chip length of 200 mm while cutting with a tool of 20 degrees rake angle using a depth of cut of 0.5 mm. Determine the shear plane angle and chip thickness? **08**
- c) Describe in detail the crater and flank wear? **04**

UNIT - II

- 2 a) With a neat sketch, explain the construction of a Column and Knee milling machine. **08**
- b) With a neat sketch, explain any four drilling machine operations. **12**

OR

- 3 a) Analyse the constructional features of a shaper with a neat sketch? **08**
- b) Discuss the differences between a Planer and a Shaper? **06**
- c) Explain compound indexing of 77 divisions? **06**

UNIT - III

- 4 a) Briefly explain, forging die design parameters. **08**
- b) Explain in detail process variables of rolling. **06**
- c) Explain various defects in forged components. **06**

OR

- 5 a) With neat figures, explain direct and indirect extrusion process. **10**
- b) Explain the various process variables of extrusion process. **10**

Important Note: Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

UNIT - IV

- 6 a) Explain with neat sketch explosive and electromagnetic forming and also state the applications of the same. **10**
- b) Explain with neat sketch the defects in sheet metal products. **10**

UNIT - V

- 7 a) With a neat sketch, explain the construction and principle of operation of Laser beam machining? Also list the advantages and disadvantages of the process? **10**
- b) With a neat sketch, explain the construction and principle of operation of Ultrasonic machining? Also list the advantages and disadvantages of the process? **10**
