

CBCS SCHEME

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18ME35A/18MEA305

Third Semester B.E. Degree Examination, Jan./Feb. 2023

Metal Cutting and Forming

Time: 3 hrs.

Max. Marks: 100

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

Module-1

- 1 a. With a neat sketch, explain single point cutting tool nomenclature. (12 Marks)
b. Differentiate between orthogonal and oblique cutting. (08 Marks)

OR

- 2 a. With a sketch, explain parts of a lathe. (12 Marks)
b. Differentiate between Turret and Capstan lathe. (08 Marks)

Module-2

- 3 a. With a neat sketch, explain Horizontal milling machine. (10 Marks)
b. Differentiate between upmilling and downmilling process. (10 Marks)

OR

- 4 a. With sketches explain the following:
i) Reaming ii) Boring iii) Counter boring iv) Counter sinking. (12 Marks)
b. With a neat sketch, explain centerless grinding machine. (08 Marks)

Module-3

- 5 a. Define tool life. What are the factors affecting tool life. (10 Marks)
b. Briefly explain different types of cutting fluids and their applications. (10 Marks)

OR

- 6 a. Explain the effect of machining parameters on surface finish. (10 Marks)
b. A 150mm long 12.7mm diameter stainless steel rod is turned to 12.19mm diameter on a center lathe with spindle speed 400 rev/min and axial speed 203.2 mm/min. Calculate MRR and machining time. (10 Marks)

Module-4

- 7 a. Differentiate between Hot working and cold working. (08 Marks)
b. With a sketch explain Hydraulic forging press. (12 Marks)

OR

- 8 a. Explain the following rolling mills: i) Two-high rolling mill ii) Three-high rolling mill
iii) Cluster rolling mill. (12 Marks)
b. Explain various types of Extrusion process. (08 Marks)

Module-5

- 9 a. With a sketches, explain blanking, piercing and punching. (12 Marks)
b. With a sketch, explain combination die. (08 Marks)

OR

- 10 Write a note on:
a. Drawing ratio b. Bending force
c. Compound die d. Progressive die. (20 Marks)

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.