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.

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 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)**

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