

2023

B.E. (Mechanical Engineering)

Fourth Semester

✓ MEC-404: Manufacturing Technology

Time allowed: 3 Hours

Max. Marks: 50

NOTE: Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit. Assume any missing data.

x-x-x

I. Attempt the following:-

- a) What do you mean by surface finish and write its significance in metal cutting?
- b) Define cutting speed and write its unit.
- c) What do you mean by dressing of grinding wheel?
- d) How will you specify the screw threads? Answer with example.
- e) Write the working principle of planer.
- f) Distinguish between capstan and turret lathes.
- g) What do you mean by gear finishing? Answer with justification.
- h) How drilling machines are classified? Answer briefly.
- i) What is honing? Write its application.
- j) Write the main purpose and function of automatic screw machine.

(10x1)

UNIT - I

- II. a) Explain the basic theory of metal cutting. Distinguish between orthogonal and oblique metal cutting. Give relevant and suitable sketches for both the metal cutting techniques in support of your answer. (2,4)
- b) How will you estimate the machining time and power for turning on a Centre Lathe? Explain with an example. (4)
- III. a) Explain the process of taper turning by tail stock offset with a simple sketch. (4)
- b) How will you classify the shaping machine? Explain. Give a simple sketch of quick return mechanism and explain the working principle of shaping machine.

(2,4)

P.T.O.

(2)

- IV. a) Write the name of different types of milling machines. Explain the principle of any one milling machine from your answer. What is indexing and write its significance. (1+3+2)
- b) Differentiate between shaping and slotting. How will you define the speed and feed in drilling? Explain. (2+2)

UNIT - II

- V. a) Sketch a grinding wheels and level the various elements. Explain the procedure for codification of a grinding wheels. What do you mean by wheel balancing? Explain with justification. (2+3+2)
- b) Explain the process of gear manufacturing by casting. (3)
- VI. a) Explain the process of cutting worm and worm wheel. Give simple sketch in support of your answer. (4)
- b) Explain the process of making threads using die head. Give simple sketch in support of your answer. How this process is different from thread tapping? Explain with justification. (4+2)
- VII. a) State and explain the main purpose of super finishing. What is lapping? How it is different from buffing? Explain briefly. (2+1+2)
- b) Explain the process of metal spraying. What is thread grinding and write its significance? (3+2)