Roll No. _____

3209

B. Tech. (ME) 5th Semester Examination – February, 2022

MANUFACTURING TECHNOLOGY - I

Paper : PCC-ME-305-G

Time : Three Hours] *[Maximum Marks : 75*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions in all, selecting at least ***one*** question from each Unit. Question No. **1** is ***compulsory***. All questions carry equal marks.

1. (a) Difference between shaper and planer. 2.5

(b) Types of Cutting Fluid. 2.5

(c) Arc blow and Arc Crater. 2.5

(d) Difference between hot working and cold working. 2.5

(e) Define Jigs and Fixtures. 2.5

(f) Name various Tool material. 2.5

2. (a) Explain various types of chip in metal cutting. 7.5

(b) In an orthogonal machining operation : 7.5

Uncut thickness = 0.5 mm

Cutting speed = 20 m/min Rake angle = 15°

Width of cut = 5 mm Chip thickness = 0.7 mm

Thrust force = 200 N, Cutting force = 1200 N

Assume Merchant's theory.

The coefficient of friction at the tool-chip interface is.

3. (a) Discuss the various types of drill bushes in detail. 7.5

(b) Calculate Drilling power for 60 mmdiameter drill having a fee of 0.50 mm/rev. The Cutting speed is 0.9 m/s. The material factor for brass is 0.55. Determine also the drill thrust. 7.5

UNIT – II

4. (a) What do you mean by degree of freedom of movements of a free body in space ? 7.5

(b) Explain different types of milling fixures. 7.5

5. Write short note on : 15

(a) Auto- Collimator

(b) Types of fits

(c) Classify Gauge

UNIT – III

6. (a) Explain Lathe machine with neat and clean sketch. 7.5

(b) Explain various types of indexing in milling. 7.5

7. (a) Explain various types of casting Allowances. 7.5

(b) Discuss the contruction and working of cupola furnace with neat sketch. 7.5

UNIT – IV

8. (a) Explain TIG welding with neat and clean sketch. 7.5

(b) Explain different types of welding defects and their remedies. 7.5

9. (a) Explain extrusion process and their types in detail. 7.5

(b) Explain various sheet metal operation. 7.5