

Unit IV

No. of Printed Pages : 04

Roll No.

7. Write short notes on the following : 7,6,6

- (a) Design of Drilling
- (b) Design of Milling Fixture
- (c) Product Cycle in Manufacture.

8. Write short notes on the following : 7,7,6

- (a) Part Print Analysis
- (b) Go- and No-Go Gauges
- (c) Introduction to machine tool testing.

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B. Tech. EXAMINATION, Dec. 2017

(Fifth Semester)

(B. Scheme) (Main & Re-appear)

(ME)

ME-309-B

MANUFACTURING SCIENCE

Time : 3 Hours]

[Maximum Marks : 75

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

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit. All questions carry equal marks.

Unit I

1. (a) Give the nomenclature of milling tool.
(b) Write a short note on Merchant cutting force circle.
(c) Give the temperature distribution at tool-chip interface in case of single point cutting tool used for orthogonal cutting.
2. Describe briefly the mechanism of metal cutting. Establish the various relationship of cutting forces and velocities in relation to chip thickness ratio, shear angle back rake angle. Main cutting force and cutting speed in case of orthogonal cutting experiment.

Unit II

3. Classify cutting tool materials and cutting fluids. Name the objectives for each classification.

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4. (a) Name the factors governing tool life.
(b) Describe briefly the economics involved in machining a job.
(c) Write a short note on gear hobbing. 7,7,6

Unit III

5. Differentiate among ultrasonic machining, electron beam machining and Laser beam machining based on basic principle, process setup, procedural steps, process parameters, advantages, disadvantages and applications for each. 20
6. Differentiate among Electrochemical grinding, Electro-discharge machining and abrasive jet machining based upon basic parameters, process setup, procedural steps, relative merits, demerits and applications. 20

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P.T.O.