

Exam.Code:0940
Sub. Code: 7050

1058
B.E. (Mechanical Engineering)
Fourth Semester
MEC-405: Manufacturing Technology – I

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. .

x-x-x

I. Attempt the following:-

- a) Define tool life and list the factors affecting tool life?
- b) What is the difference between single point and multi point cutting tools?
- c) Sketch the tool post of a lathe machine?
- d) What do you mean by speed and feed of a shaper machine?
- e) What do you mean by truing of a grinding wheel?
- f) What is up milling operation?
- g) List the work holding devices used on a lathe machine?
- h) What are the commonly cutting tool materials?
- i) List the main parts of a lathe machine?
- j) What are the various different coolant materials used during cutting? (10x1)

UNIT – I

II. a) What are the various types of chip formation types? Explain.

b) Draw the neat sketch of single point cutting tool geometry and explain the terminology? (10)

III. A mild steel workpiece of 120 mm diameter is to be turned using HSS tool. Some of the spindle speeds available on the lathe machine are 90, 114, 155, 200, 250, 320, 400 and 500 RPM. The tool life exponent of the Taylor's tool life equation is 0.6 and the value of the machining constant is 700. What is the highest spindle speed that the operator should choose for 60 minutes tool life (Hint: Take cutting speed in m/min and tool life in min.)? (10)

IV. a) Explain the construction and working of a vertical milling machine?

b) Write the specifications of a planner machine? (10)

P.T.O.

(2)

UNIT - II

- V. a) Explain the various shapes of a grinding wheel?
b) How balancing of a grinding wheel is done? Explain (10)
- VI. a) Sketch and explain the various components of a boring machine?
b) Sketch and explain the various components of a broach? (10)
- VII. Write short note on any two of the following:
a) Thread milling
b) Thread grinding
c) Elements of screw threads (10)

Tin
NC

x-x-x