(DME 316)

B. Tech. DEGREE EXAMINATION, MAY - 2015

(Examination at the end of Third Year)

MECHANICAL ENGINEERING

Paper - VI : Metal Cutting & Machine Tools

Time : 3 Hours **Maximum Marks : 75**

Answer question No. 1 is compulsory ***(15)***

Answer ONE question from each unit ***(4 x 15 = 60)***

1) Write a short notes on the following:

a) What are the basic elements for machining operations? Explain any two.

b) Explain about all geared head stock.

c) Explain about cross-rail in shapes.

d) What are the work holding devices in milling machine?

e) What are the Drilling tools? Explain one.

UNIT - I

2) Explain briefly with neat diagrams of any six Lathe accessories.

OR

3) a) Explain Thread Cutting by using Lathe.

b) Explain Machining Parameters in Lathe.

UNIT – II

4) What are the types of Drilling Machines? Discuss briefly with neat diagram of Radial drilling machine.

OR

5) a) Explain the factors to be kept in mind in selecting a grinding wheel?

b) Identify standard marking system gives below on grinding wheel

30 – A – 36 – H – 6 – V – G

UNIT – III

6) a) Explain with sketch of Nomenclature of a plain milling cutter.

b) Explain briefly about Methods of Milling.

OR

7) a) Describe the construction and working of a "Column and Knee" type milling machine with line diagram.

b) What are the Milling operations? Explain

UNIT – IV

8) a) Describe Tool Geometry of Single Point Cutting tool.

b) In orthogonal cutting of a mild steel component, if the rake angle of tool is 10º and shear angle is 30º, find the chip thickness ratio.

OR

9) a) What are the factors influencing in tool life? Explain

b) Determine the cutting speed and machining per cut when the work having 35mm diameter is rotated at 200 rpm. The feed given is 0.2 mm/rev and length of cutting is 60 mm.

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