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10ME/AU45

Fourth Semester B.E. Degree Examination, June/July 2015
Manufacturing Process – II

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Explain the various elements of a single point cutting tool, with the help of a neat sketch. **(08 Marks)**

b. With the help of neat sketches, explain the different types of chips that are formed during metal cutting. **(06 Marks)**

c. The following data refer to an orthogonal cutting process. Chip thickness 0.62mm, feed 0.2mm, rake angle 15°. Calculate chip reduction coefficient and shear angle. **(06 Marks)**

2 a. Clearly explain the different factors that are to be considered during the selection of a cutting tool material. **(12 Marks)**

b. Explain with neat sketch measurement of tool tip temperature. **(08 Marks)**

3 a. With the help of a neat sketch, explain the constructional feature of a capstan lathe. **(06 Marks)**

b. With a neat sketch, explain hydraulic driving mechanism of a shaper. **(08 Marks)**

c. Sketch and explain the open and cross belt driving mechanism of a planer. **(06 Marks)**

4 a. Draw a neat sketch of a drill bit and explain its nomenclature. **(08 Marks)**

b. With a neat sketch, explain the working of gang drilling machine. **(06 Marks)**

c. Explain with sketches the following operations in a drilling machine:
i) Spot facing ii) Tre panning. **(06 Marks)**

PART – B

5 a. With a neat sketch explain horizontal milling machine. **(08 Marks)**

b. Show the calculations for setting dividing head to mill 87 divisions on a shaper wheel blank by compound indexing. **(06 Marks)**

c. Sketch and explain the slab milling and gang milling operations. **(06 Marks)**

6 a. What do you mean by grit, grade and structure of grinding wheel? **(06 Marks)**

b. With the help of a block diagram, explain the working of a center type cylindrical grinding machine. **(08 Marks)**

c. Write a short note on selection of grinding wheel. **(06 Marks)**

7 a. With the help of neat sketches, discuss the working of continuous surface broaching machine. **(10 Marks)**

b. Sketch and explain the process of lapping on a lapping machine. **(10 Marks)**

8 a. Explain with neat sketch principle and advantages of electro chemical machining process. **(10 Marks)**

b. Explain with neat sketch principle and applications of ultrasonic machining process. **(10 Marks)**

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