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10ME665

Sixth Semester B.E. Degree Examination, Dec.2014/Jan.2015
Non – Traditional Machining

Time: 3 hrs. Max. Marks: 100

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

PART - A

1 a. List the unconventional machining processes under mechanical energy thermal and chemical energy category. **(06 Marks)**

b. Differentiate between conventional (traditional) and non traditional machining processes with examples. **(06 Marks)**

c. Make a comparison between traditional and non traditional machining process in terms of cost, application, scope, machine time and limitations. **(08 Marks)**

2 a. What are the advantages and disadvantages of USM? **(06 Marks)**

b. With a neat sketch, explain the principle working of USM. **(14 Marks)**

3 a. How does ASM differ from conventional sand blasting process? **(04 Marks)**

b. What are the different types of abrasives used in ASM? **(04 Marks)**

c. State and explain the working and principle of abrasive jet machining. **(12 Marks)**

4 a. What are the advantages and disadvantages of ECM? **(06 Marks)**

b. What are the factors that influences oxidation of ECM? **(04 Marks)**

c. Explain the principle of electro chemical grinding, with a neat sketch. **(10 Marks)**

PART - B

5 a. Explain the principle steps involved in chemical milling to produce pockets and contours. **(06 Marks)**

b. List out the advantages and disadvantages of chemical machining. **(08 Marks)**

c. List out the major applications of CHM. Further process application related to improving the surface characteristics. **(06 Marks)**

6 a. Name some of the dielectric fluids commonly used in EDM. Name some of the tool material used in EDM. **(06 Marks)**

b. What are the basic requirements of the dielectric fluid used in EDM? **(04 Marks)**

c. With the help of neat sketch, explain wire cut electrical discharge machining. **(10 Marks)**

7 a. Explain the basic principle of PAM. **(04 Marks)**

b. With a neat sketch, explain the working of PAM. List out the advantages and limitations of PAM process. **(16 Marks)**

8 a. What are the important characteristics required for electron beam in Electron Beam Machining. **(04 Marks)**

b. List out the commonly used gasses in Laser beam machining. **(04 Marks)**

c. Explain with a neat sketch, Electron Beam machining and list out its advantages. **(12 Marks)**

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