USN | | | | | | | | | | |

14MCM24

Second Semester M.Tech. Degree Examination, June/July 2015
Non Traditional Machining

Time: 3 hrs. Max. Marks: 100

Note: ***Answer any FIVE full questions.***

1 a. Classify and compare the different types of non traditional machining processes. **(06 Marks)**

b. Explain the mechanism of metal removal in the ultrasonic machining using neat sketch. **(06 Marks)**

c. Explain in brief the various theories of mechanics in ultrasonic machining. **(08 Marks)**

2 a. What are various process parameters of abrasive jet machining? Explain their influence on material removal rate. **(08 Marks)**

b. List out the applications of abrasive jet machining. **(06 Marks)**

c. Explain the operation of water jet machining with the help of a neat sketch. **(06 Marks)**

3 a. Mention principle of operation and explain mechanism of metal removal in electric discharge machining with a neat sketch. **(08 Marks)**

b. Explain briefly the analysis of relaxation type of circuit in electric discharge machining considering material removal rate. **(06 Marks)**

c. Explain surface finish and machining accuracy expected from electric discharge machining. **(06 Marks)**

4 a. Draw neat sketch of electro chemical machining equipment and explain its principle chemistry. **(12 Marks)**

b. Explain electro chemical grinding process with help of a neat sketch. **(08 Marks)**

5 a. What are elements of chemical machining, explain them. **(06 Marks)**

b. Draw and explain plasma arc machining with generation of plasma and mechanism of metal removal. **(08 Marks)**

c. Explain various types of torches used in plasma arc machining. **(06 Marks)**

6 a. Draw neat sketch of EBM equipment and explain its working. **(10 Marks)**

b. Explain thermal and non thermal types of EBM (Electron Beam Machining). **(10 Marks)**

7 a. What is apparatus required for laser beam machining? Explain metal removal process. **(12 Marks)**

b. List advantages and disadvantages of laser beam machining. **(08 Marks)**

8 a. Compare conventional and high velocity forming. **(06 Marks)**

b. Explain various types of high velocity forming processes in brief. **(08 Marks)**

c. List applications of high velocity forming. **(06 Marks)**

* * * * *