[Total No. of Questions - 8] [Total No. of Printed Pages - 3]
(2063)

851

M.Tech 2nd Semester Examination

Non Conventional Machining Processes

PE-207

Time : 3 Hours **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary continuation sheet will be issued.

Note : Attempt any five question.

1. (a) Explain the different classifications of new technology with respect to mechanism, energy and processes. **(10)**

   (b) How the analyses of process of abrasive jet technology are carried out? **(10)**

2. (a) Explain with neat sketch the mechanism of material removal rate of ultra sonic machining also discuss the functions of transducer and horn in case of USM. **(10)**

   (b) What are various process parameters of USM, how these parameters affect the material removal rate, surface finish and dimensional accuracy? **(10)**

3. (a) Sketch and explain an electro chemical machining set up highlighting its advantages and applications. **(10)**

(b) Discuss the different parameters that influence the performance of chemical machining process and also discuss in brief why surface finishing obtained in case of chemical machining of alloy is poor? **(10)**

4. (a) Explain with neat sketch the working principle of electrical discharge machining. **(10)**

(b) What are the different types of flushing system used in EDM and also discuss the factors influencing the choice of electrode material in EDM. **(10)**

5. (a) Discuss the principle of laser beam and also explain the effect of focusing on the performance of laser beam machining. **(10)**

(b) Explain various process parameters that influence the performance of laser beam machining. **(10)**

6. (a) Explain with schematic diagram the mechanism of material removal of abrasive jet machining and also discuss its applications. **(10)**

(b) Why different abrasives produce different MRR and also discuss the reasons for inaccuracies in abrasive jet machining. **(10)**

7. With schematic diagram discuss the working principle of explosive forming. Compare the confined and non-confined explosive forming in detail. **(20)**

8. Write short note on any four of the following:

(a) Electro hydraulics and its applications

(b) EBM parameters

(c) Electron beam actions

(d) Tool design of EDM

(e) Dynamic and hydro dynamic system of electro chemical machining. **(5×4=20)**