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10ME665

Sixth Semester B.E. Degree Examination, June/July 2017
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. Give broad classification of nontraditional machining process. (06 Marks)
b. Explain the need for development of nontraditional machining process. (04 Marks)
c. With a neat sketch, explain the working principle of ultrasonic machining process. (10 Marks)
- 2 a. Sketch and explain any two type of tool feed system in ultrasonic machining process. (10 Marks)
b. Discuss the influence of the following parameters on USM process :
i) Amplitude and frequency of vibration ii) Grain size iii) Effect of slurry
iv) Effect of applied static load v) Effect on work material. (10 Marks)
- 3 a. Explain the process variables that influence the metal removal rate in abrasive jet machining. (10 Marks)
b. Explain with help of a neat sketch, working principle of water jet machining process and also mention its advantages. (10 Marks)
- 4 a. With a neat sketch, explain the working principle of Electro Chemical Machining (ECM) process. (08 Marks)
b. Describe Chemistry involved in ECM process. (06 Marks)
c. Explain with neat sketch, Electro Chemical Grinding (ECG) process. (06 Marks)

PART – B

- 5 a. Explain the process characteristics in Chemical Machining (CHM) process. (06 Marks)
b. Explain with neat sketch, the sequence of process steps involved in chemical blanking process. (08 Marks)
c. Discuss the factors to be considered for selection of Maskants and types that are used in chemical machining. (06 Marks)
- 6 a. Explain the working principle of EDM process, with neat sketch. (08 Marks)
b. List the commonly used dielectric fluid in EDM process. What properties should they possess? (06 Marks)
c. Sketch and explain Travelling wire EDM process. (06 Marks)
- 7 a. Briefly explain the parameters that influence PAM performance. (06 Marks)
b. Explain the types of torches used in PAM process. (08 Marks)
c. Lists the important safety precaution to be considered to PAM process. (06 Marks)
- 8 a. Explain the working principle of LBM, with neat sketch. (08 Marks)
b. Explain briefly types of lasers used in LBM process. (06 Marks)
c. With a neat sketch, explain the principle of EBM process. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any recalculation of identification number to be avoided and any corrections written on P.T. & 50 will be treated as unbalanced.