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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 revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.