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10ME665

Sixth Semester B.E. Degree Examination, June/July 2018
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. How do you classify Non-traditional Machining processes? Discuss briefly. (08 Marks)
b. Compare the Traditional and Non-Traditional machining processes. (06 Marks)
c. Write a short note on Abrasive slurry. (06 Marks)
- 2 a. With a neat sketch, explain the working principle and operation of USM process. (08 Marks)
b. Discuss the effects of the following parameters on MRR applicable to USM process:
(i) Amplitude and frequency of vibration.
(ii) Applied static load. (06 Marks)
(iii) Ratio of workhardness to Tool hardness. (06 Marks)
c. Mention any two advantages, disadvantages and applications of USM process. (06 Marks)
- 3 a. With a neat sketch, explain the working principle and operation of AJM process. (08 Marks)
b. Derive an expression for MRR of brittle materials in case of AJM process. (06 Marks)
c. Mention any two advantages, disadvantages and applications of Water Jet Machining process. (06 Marks)
- 4 a. Briefly explain the electrolytes used in ECM process. (08 Marks)
b. Briefly explain the Chemical Reactions that occur in ECM process. (06 Marks)
c. With a schematic diagram, explain the Electro-Chemical Honing process. (06 Marks)

PART – B

- 5 a. List out the various process parameters and briefly explain their effects on Chemical Machining process. (08 Marks)
b. With the help of a flow chart, briefly explain the Chemical Milling process. (06 Marks)
c. Write a short note on Chemical Blanking. (06 Marks)
- 6 a. With a neat sketch, briefly explain the Feed control in EDM process. (08 Marks)
b. What is flushing? Explain any two methods of flushing in EDM process. (06 Marks)
c. What are the requirements of Dielectric fluid? Mention any two dielectric fluids used in EDM process. (06 Marks)
- 7 a. With a neat sketch, explain the working principle of ECG process. (08 Marks)
b. With a neat sketch, briefly explain the PAM process. (06 Marks)
c. Discuss some of the important considerations in the design of Plasma Torch in PAM. (06 Marks)
- 8 a. With a neat sketch, briefly explain the principle and working of Laser Beam Machining process. (08 Marks)
b. With a neat sketch, briefly explain the principle and working of Electron Beam Machining. (06 Marks)
c. Mention any two advantages, disadvantages and applications of Laser Beam Machining. (06 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. The question paper will be available on the website of the University of Mumbai on 17.8.2018. It will be treated as malpractice.