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