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10ME665

**Sixth Semester B.E. Degree Examination, June / July 2014**  
**Non Traditional Machining**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

- 1 a. Explain the need of NTM and give the complete classification of NTM. (10 Marks)  
b. With schematic diagram, explain USM. (10 Marks)
- 2 a. Explain the parameters that effect on metal removal in USM process. (08 Marks)  
b. Explain the tool feed mechanism in USM. (06 Marks)  
c. Explain clearly the applications, advantages and disadvantages of USM process. (06 Marks)
- 3 a. Explain the variables in AJM process. (08 Marks)  
b. With simple sketches explain nozzle geometry in AJM process. (06 Marks)  
c. Write the applications, advantages and limitations of waterjet machining process. (06 Marks)
- 4 a. Explain the chemistry in ECM process. (08 Marks)  
b. With sketch explain the following:  
i) Electrochemical grinding.  
ii) Electro chemical Honing. (12 Marks)

**PART – B**

- 5 a. What is chemical machining? Explain the fundamental principles. (06 Marks)  
b. Explain the following with sketches : i) Chemical milling ii) Chemical Blanking (08 Marks)  
c. Explain the different types of Maskants used in chemical machining. (06 Marks)
- 6 a. What are the requirements of a good dielectric fluid used in EDM process? Explain the methods of dielectric flushing in EDM process. (10 Marks)  
b. With sketch explain Rotary pulse generator type power supply circuit in EDM. (06 Marks)  
c. Explain the following with respect to EDM:  
i) EDM tool (Electrodes)  
ii) Heat affected zone. (04 Marks)
- 7 a. Explain with sketch the principle of plasma generation and mechanism of metal removal in plasma arc machining. (10 Marks)  
b. Explain the safety precautions in PAM. (04 Marks)  
c. Mention any two advantages, applications and limitation in PAM. (06 Marks)
- 8 With a sketch explain the following process and also mention their merits and demerits :  
a. Laser beam machining.  
b. Electron beam machining. (20 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.