

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (E-I 2011 onwards) (Sem.-6)

**NON TRADITIONAL MACHINING**

Subject Code : DE/ME-2.0

Paper ID : [A2411]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

**SECTION-A**

**Q1. Write briefly :**

- a) What are the limitations of conventional manufacturing processes?
- b) Explain the effect of current during machining with EDM.
- c) What will be the effect of standoff distance (SOD) during machining with abrasive jet machining?
- d) Write the basic principle of Electro chemical machining.
- e) Name the common dielectric fluids used in EDM.
- f) What is the difference between ECG and conventional grinding?
- g) Explain the function of servo-mechanism in EDM.
- h) What is the mechanism of material removal in PAM?
- i) Explain why the mechanical properties of workpiece materials are not significant in most of the NTMM?
- j) Explain why EBM process is performed usually in a vacuum chamber.

### SECTION-B

- Q2. Discuss the principle of laser Beam machining, and also discuss its process capability and applications.
- Q3. Discuss the main function and types of dielectric fluids used in Electro Discharge Machining.
- Q4. Explain the working of abrasive jet machining with suitable sketch.
- Q5. What are the limitations of Hot Machining methods?
- Q6. Explain any hybrid machining process.

### SECTION-C

- Q7. With the help of a suitable diagram, explain the working of Ultrasonic Machining and also discuss the effect of various process parameters on material removal rate (MRR) and accuracy of the machined work piece.
- Q8. Explain the working principle of Electrochemical Machining (ECM) and also elaborate the electrochemistry of the ECM process.
- Q9. Write notes on :
- (a) Electrochemical honing
  - (b) Effect of heat and H<sub>2</sub> bubble generation in ECM process.