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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(ME) (2011 Onwards E-II) (Sem.-7,8)**NON-TRADITIONAL MACHINING****Subject Code : DE/PE-2.0****Paper ID : [A3074]****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 has to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students has to attempt any **TWO** questions.

SECTION-A**Q1 Answer briefly :**

- a) Name the common tool materials used in EDM along with basic requirements.
- b) Define electron beam.
- c) List some basic characteristics of USM.
- d) Give some common electrolytes used in ECM.
- e) State the applications of hybrid machining processes.
- f) For what type of works the chemical machining is best suited.
- g) What is the function of water muffler in plasma arc machining?
- h) What is the self adjusting feature in ECM?
- i) What are the latest trends in manufacturing?
- j) Differentiate between electrochemical grinding over conventional grinding.

SECTION-B

- Q2 Enlist the various characteristics and applications of Computer Integrated Manufacturing System.
- Q3 Give a detailed classification of “*Non-Traditional Machining Methods*”.
- Q4 Give the details of mechanism of material removal in LBM.
- Q5 What is the working Principle of Electric Discharge Machining? State the criteria for selection of Electrode material and applications.
- Q6 Differentiate between electrochemical honing and electrochemical deburring.

SECTION-C

- Q7 It is required to produce a 200 micron wide slot in a 1.5 mm thick titanium sheet, by using an electron beam with 4 kW power. Calculate the cutting speed if the specific power consumption for titanium is $6 \text{ W/mm}^3/\text{min}$.
- Q8 Explain with a neat diagram the elements of abrasive flow machining process. Also state its limitations along with applications.
- Q9 Write short notes on the following :
- a) Hybrid machining processes
 - b) Hot machining