

Seat No.: \_\_\_\_\_

Enrolment

No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**

**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014**

**Subject code: 1720810**

**Date: 25-06-2014**

**Subject Name: Modern Machining Methods**

**Time: 02:30 pm - 05:00 pm**

**Total Marks: 70**

**Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Classify the modern machining methods on the basis of the type of energy used and give the suitable example for each. **07**
- (b) Enlist the factors that should be considered during the selection of modern machining method for the given job. **07**
- Q.2** (a) Write the process parameters of abrasive jet machining (AJM) process and explain the effect of any two parameter on the material removal rate for the AJM. **07**
- (b) What are the elements of ultrasonic machining (USM) process? Explain any two of them in brief. **07**
- OR**
- (b) Explain the working principle of ultrasonic machining (USM) process and write the applications of USM. **07**
- Q.3** (a) Write the essential requirements of the servo-system and its types which are use in electrodischarge machining (EDM) process. **07**
- (b) Explain with neat sketch the working principle of wire-cut EDM (WEDM). **07**
- OR**
- Q.3** (a) Explain the effect of inter-electro gap and current on generated surface finish during the EDM process in normal circumstances. **07**
- (b) Write the various applications of wire-cut EDM (WEDM). **07**
- Q.4** (a) Draw the neat self-explainer sketch that conveys the principle of electro-chemical grinding (ECG) process. **07**
- (b) Write the advantages and limitations of chemical machining process. **07**
- OR**
- Q.4** (a) Write the advantages and disadvantages of electrochemical machining (ECM) process. **07**
- (b) What you mean by maskants? Explain its types. **07**
- Q.5** (a) Explain the working principle of laser beam machining (LBM) process. **07**
- (b) Enlist the process parameters of plasma arc machining (PAM) process and explain effect of any two on the material removal for the same. **07**
- OR**
- Q.5** (a) Write the applications of laser beam machining process. **07**
- (b) What are the main elements of plasma arc machining cutting system? Explain any one of them in brief. **07**

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