

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

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

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**ME – SEMESTER I (NEW) – • EXAMINATION – SUMMER 2016**

**Subject Code: 2710807**

**Date: 19/05/2016**

**Subject Name: Advanced Materials Processing Techniques**

**Time: 02:30 pm to 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)** What do you mean by non-conventional processes? Classify the non-conventional processes also. **07**
- (b)** What do you mean by modeling and simulation of processes? Show the usefulness of both through examples. **07**
- Q.2 (a)** Enlist the applications of abrasive flow machining process. **07**
- (b)** Explain the principle of ultrasonic machining. Why it is not suitable for ductile material? **07**
- OR**
- (b)** Explain the material removal process in EDM. How the die sinking EDM differ from EDM process? **07**
- Q.3 (a)** Through the sketch demonstrate working principle of magneto rheological abrasive finishing process and labeled the same. **07**
- (b)** Write the short note on powder metal forming technique. **07**
- OR**
- Q.3 (a)** Write the process parameters and their effect on surface finish in case of magnetic abrasive finishing process. **07**
- (b)** What do you mean by high energy rate forming techniques? Describe any one. **07**
- Q.4 (a)** Write the short note on electro hydraulic forming. **07**
- (b)** Write the difference between hot and cold isostatic pressing. **07**
- OR**
- Q.4 (a)** Write the difference between wet chemical etching and dry plasma etching. **07**
- (b)** Define “micromachining” and write the applications of such micromachining processes. **07**
- Q.5 (a)** Give the names and applications of micro-devices. **07**
- (b)** Explain any two measuring techniques that are use in micromachining. **07**
- OR**
- Q.5 (a)** Explain the material removal mechanism of metal by laser. **07**
- (b)** Write the short note on laser micro-drilling. **07**

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