

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 differs from EDM process? **07**
- Q.3** (a) Through the sketch demonstrate working principle of magneto rheological abrasive finishing process and label 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 used 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**
