

**GUJARAT TECHNOLOGICAL UNIVERSITY****ME SEMESTER – I EXAMINATION – SUMMER 2017****Subject Code:2710807****Date:11/05/2017****Subject Name: Advanced materials Processing Techniques****Time: 02:30 p.m. to 05:00 p.m.****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 various finishing processes. **07**  
(b) Enlist the tool design criteria of tools use for EDM process. **07**
- Q.2** (a) Enlist the applications of magnetic abrasive flow machining process. **07**  
(b) Enlist the advantages and disadvantages of thermal type nonconventional machining processes. **07**
- OR**
- (b) Explain the material removal process in ECM. How the micro-ECM defer from ECM process? **07**
- Q.3** (a) Through sketch demonstrate the working principle of abrasive finishing process and labeled the same. **07**  
(b) Write the short note on electro hydraulic forming technique. **07**
- OR**
- Q.3** (a) Explain the working principle of magneto rheological abrasive finishing process with sketch. **07**  
(b) Write the advantages and disadvantages of powder metal forming techniques. **07**
- Q.4** (a) Write the short note on super plastic forming. **07**  
(b) Discuss the principle of micro-turning and write its applications. **07**
- OR**
- Q.4** (a) What do you mean by surface integrity? How the surface integrity defer from surface finish? **07**  
(b) Write the difference between diffusion and ion-implantation with suitable examples. **07**
- Q.5** (a) Write the short note on metallization. **07**  
(b) Enlist the various types of laser use in macro-manufacturing and micro-manufacturing. **07**
- OR**
- Q.5** (a) What do you mean by solid free form fabrication? Explain with suitable example. **07**  
(b) Discuss the interaction of laser with materials. **07**

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