

**GUJARAT TECHNOLOGICAL UNIVERSITY****ME - SEMESTER– I (New course)• REMEDIAL EXAMINATION – SUMMER 2015****Subject Code: 2710807****Date:16/05/2015****Subject Name: Advanced Materials Processing Technologies****Time: 10:30 am to 1:00 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) The non-conventional processes are more appropriate as an advanced material processing techniques compare to conventional processes. Justify through suitable example in brief. **07**
- (b) Explain the material removal mechanism of any one thermal type non-traditional machining process with neat sketch. **07**
- Q.2** (a) Write the difference between mechanical and electrochemical type non-traditional machining processes. **07**
- (b) Enlist the advantages of simulation of non-conventional processes. **07**
- OR**
- (b) Write the criteria of tool design for electrical discharge machining (EDM) process. **07**
- Q.3** (a) Explain the working principle of magneto rheological abrasive finishing process with sketch. **07**
- (b) Enlist the applications of magnetic abrasive finishing process. **07**
- OR**
- Q.3** (a) Explain the working principle of abrasive flow finishing process with sketch. **07**
- (b) Write the short note on electro hydraulic forming process. **07**
- Q.4** (a) Write the advantages and disadvantages of hot and cold isostatic pressing. **07**
- (b) What do you mean by micromachining? Explain the basic principle of micro-ECM. **07**
- OR**
- Q.4** (a) Explain the difference between surface finish and surface integrity. **07**
- (b) Write the required characteristics of laser use for micromachining with examples. **07**
- Q.5** (a) Describe ion implantation technique used for fabrication of micro-devices. **07**
- (b) Write short note on electron microscope. **07**
- OR**
- Q.5** (a) Describe the diffusion process use for micro devices. **07**
- (b) Explain the working principle and applications of LIGA process. **07**

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