

GUJARAT TECHNOLOGICAL UNIVERSITY**ME – SEMESTER –I-(New) EXAMINATION – SUMMER 2019****Subject Code: 3710807****Date: 13/05/2019****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) “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) Classify the non-conventional processes with suitable examples. **07**
- Q.2** (a) Enlist the advantages and disadvantages of thermal and mechanical type non-conventional process group. **07**
- (b) Classify the various finishing processes. **07**
- OR**
- (b) Through sketch demonstrate the working principle of abrasive finishing process. **07**
- Q.3** (a) How the magneto rheological abrasive finishing (MRAF) process defer from magnetic abrasive finishing (MAF)? Write the advantages of MRAF over MAF. **07**
- (b) Write the short note on electro hydraulic forming process. **07**
- OR**
- Q.3** (a) Write the criteria of tool design for electrical discharge machining (EDM) process. **07**
- (b) Explain the working principle of Magneto Rheological Abrasive Finishing process. **07**
- Q.4** (a) Write the short note on super plastic forming. **07**
- (b) What do you mean by hybrid micromachining? Justify the idea of hybridization in micromachining through suitable example. **07**
- OR**
- Q.4** (a) Enlist the properties that must satisfy by thin film in surface micromachines and discuss any one of them. **07**
- (b) Explain the difference between surface finish and surface integrity. **07**
- Q.5** (a) Enlist the industrial applications of laser in manufacturing domain. **07**
- (b) Write the advantages and disadvantages of hot and cold isostatic pressing. **07**
- OR**
- Q.5** (a) Explain the working principle and applications of LIGA process. **07**
- (b) Write the require characteristics of laser use for micromachining with examples. **07**
