

GUJARAT TECHNOLOGICAL UNIVERSITY
ME - SEMESTER– I • EXAMINATION – WINTER 2014

Subject Code: 2710807

Date: 12/01/ 2015

Subject Name: Advanced Materials Processing Technologies

Time:

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 non-conventional processes with suitable examples. **07**
(b) Classify the measuring system use for micromachining with suitable examples. **07**
)
- Q.2** (a) Write the criteria of tool design for any one non-traditional machining process. **07**
(b) Explain the material removal mechanism of any one mechanical type non- **07**
) traditional machining process with neat sketch.
- OR**
- (b) Explain the material removal mechanism of electrochemical type non-traditional **07**
) machining with neat sketch.
- Q.3** (a) Enlist the process parameters of abrasive flow finishing process (AFM) and **07**
discuss with sketch their effect on material removal rate for the AFM.
(b) Explain the working principle of Magneto Rheological Abrasive Finishing **07**
) process.
- OR**
- Q.3** (a) How the magneto rheological abrasive finishing (MRAF) process defer from **07**
magnetic abrasive finishing (MAF)? Write the advantages of MRAF over MAF.
(b) Explain the material removal mechanism of magnetic abrasive finishing (MAF) **07**
) with neat sketch.
- Q.4** (a) Write the short note on super plastic forming. **07**
(b) What do you mean by micromachining? Discuss how the micro-EDM defers **07**
) from EDM?
- OR**
- Q.4** (a) Write the difference between hot and cold isostatic pressing with example. **07**
(b) Write the short note on micro-drilling. **07**
)
- Q.5** (a) Discuss on difference between surface machining and bulk machining. **07**
(b) Explain the principles of laser material removal with sketch. **07**
)
- OR**
- Q.5** (a) Write the advantages and disadvantages of LIGA. **07**
(b) Enlist the industrial applications of laser in manufacturing domain. **07**
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