

Code No: 57030

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, November - 2015

UNCONVENTIONAL MACHINING PROCESSES

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) Explain the various characteristics of unconventional machining processes.
b) List out the applications of Non-traditional machining processes. [7+8]
- 2.a) Explain the detail the various elements in ultrasonic machining process?
b) A Glass is being machined at a MRR of $6 \text{ mm}^3/\text{min}$ by Al_2O_3 abrasive grits having a grit diameter of $150 \mu\text{m}$. If $100 \mu\text{m}$ grits were used, what would be the MRR? [7+8]
- 3.a) Distinguish between water jet machining and abrasive water jet machining.
b) Explain the working of abrasive jet machining with a neat sketch. [8+7]
- 4.a) Explain in detail the working principle of Electro chemical grinding process. State its advantages and limitations.
b) What is deburring process? Explain its significance. [8+7]
- 5.a) Explain in detail the considerations involved in selection of die electric fluids in EDM.
b) Explain the effect of die-electric fluids on surface finish in EDM Process. [7+8]
- 6.a) Explain in detail the various thermal aspects in machining using laser beam method.
b) With the help of schematic diagram explain the working of electron beam machining. [7+8]
- 7.a) Explain the metal removal mechanism and the process parameters in plasma machining process.
b) List out the advantages and limitations of plasma machining process. [7+8]
- 8.a) Explain the working principle of Abrasive flow finishing and state its limitations.
b) Compare Magnetic abrasive finishing and Abrasive flow finishing. [8+7]

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