

Code No: 57030

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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, March - 2017

UNCONVENTIONAL MACHINING PROCESSES

(Mechanical Engineering)

Time: 3 Hours

Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks

- 1.a) Justify the need for the development of non-traditional machining methods.
- b) Give the complete classification of non-traditional machining methods. [7+8]
- 2.a) Explain the basic mechanism of metal removal in ultrasonic machining.
- b) List out the applications and limitations of ultrasonic machining. [7+8]
- 3.a) With the help of line diagrams, explain the basic principle, equipment, applications and limitations of abrasive jet machining.
- b) What are the basic process variables effect on abrasive jet machining? Explain them. [8+7]
- 4.a) Explain the mechanism of metal removal in electro chemical deburring.
- b) Derive an equation for metal removal rate in electro chemical machining. [7+8]
- 5.a) List out the process parameters of electric discharge machining and explain influence on metal removal rate and surface roughness.
- b) Explain the use of RLC circuit for control of pulses in electric discharge machining. [7+8]
- 6.a) Explain the generation and control of electron beam.
- b) Comment about the cutting speed and accuracy of cut in laser beam machining. [7+8]
- 7.a) List out various etchants used in chemical machining and explain their merits and limitations.
- b) Explain the applications and limitations of plasma arc machining. [7+8]
- 8.a) With the help of line diagram explain the principle of working, construction, applications and advantages of magnetic abrasive finishing.
- b) Explain the working principle of electro stream drilling process. [8+7]

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