

Code: 9A03708

R09

B.Tech IV Year I Semester (R09) Supplementary Examinations, May 2013

MODERN MANUFACTURING METHODS

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 (a) What do you understand by the term non-traditional machining methods? What is their importance?
(b) Classify the common non-traditional methods. Give a list of such operations.
- 2 (a) Discuss the effects of the following parameters on MRR as applied to USM process:
 - (i) Amplitude and frequency of vibrations.
 - (ii) Grain size.
 - (iii) Applied static load.
 - (iv) Effect of slurry.
(b) Discuss briefly the advantages and disadvantages of ultrasonic machining.
- 3 (a) With a neat sketch, explain the working principle of abrasive jet machining.
(b) Mention the advantages and applications of water jet machining.
- 4 Explain the principle, working and advantages of electro chemical machining process.
- 5 (a) Explain how the machine tool selections influence the characteristics of spark eroded surface.
(b) Explain the principle of wire EDM.
- 6 (a) Explain the working principles of electron beam machining.
(b) What are the applications of laser beam machining?
- 7 (a) Explain in detail various industrial applications of plasma machining.
(b) What is the principle involved in chemical machining? Explain with suitable sketches.
- 8 What are the various rapid prototyping techniques available commercially? Explain the difference between selective laser sintering and stereo lithography in terms of principle of working.
