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

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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.

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