

Total No. of Questions: 4

Total No. of Pages: 2

College of Engineering, Pune

End Semester Examination, April/May-2013

Subject: (ME 320) Advanced Manufacturing Techniques Class: T.Y. B. Tech. (Mechanical)

Duration: 3 hours.

Max. Marks: 50

Instructions to candidates:

1. Question No. 1 is compulsory and answer any two questions from the remaining.
2. Figures to right indicate full marks.
3. Support your write up with sketches/graphical representations wherever required.

- Q. No. 1**
- a Describe the various parameters affecting the WEDM process (starting from the most predominant ones). **06**
 - b Design the process flow for Laminated Object Manufacturing with the help of neat sketch **05**
 - c With the help of a neat sketch, explain the sputtering process of PVD. Also mention merits and demerits of sputtering process. **05**
 - d During EDM process, what are the causes of generation of residual stresses? **02**
 - e What is meant by White layer in EDM? **02**
- Q. No. 2**
- a What is kerf in AWJM? Discuss its nature with the help of sketch and also state the important product quality parameters in case of kerf. **06**
 - b Explain the following terms.
i) Hot dipping ii) Anodizing **05**
 - c Discuss the effect of work piece thickness in WEDM process. **02**
 - d Represent graphically the effect of dielectric pressure on cutting speed and roughness. **02**
- Q. No. 3**
- a State the various methods used for processing plastics and explain blow moulding in detail with the help of neat sketch. **05**

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- b What do you understand by rapid prototyping? Explain how rapid prototyping process can be classified stating at least two examples for each type 04
- c What do you understand by glass transition temperature? Explain its significance in brief. 03
- d Differentiate between diffusion and ion implantation. 03
- Q. No.4** a With help of schematic diagram, Identify and explain different modules of ECM equipment. 06
- b What is short peening operation. What are the changes in surface characteristics after short peening. 03
- c Write short note on "Current trends in design and manufacturing" 04
- d Explain the following in brief.
i) Cross linked polymers
ii) Copolymers and teropolymers 02
