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Printed Pages : 3

TME-14

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0406

Roll No.

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B. Tech.

(SEM. VII) EXAMINATION, 2008-09

UNCONVENTIONAL MANUFACTURING PROCESS

Time : 3 Hours]

[Total Marks : 100

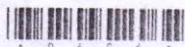
Note : Attempt all questions.

1 Attempt any **two** parts of the following : **10×2=20**

- (a) Briefly discuss various factors that emphasize on the need of unconventional machining processes ?
- (b) Enumerate the elimination steps to select a process for making printed circuit boards.
- (c) List the various classifications used to define unconventional machining processes.

2 Attempt any **two** parts of the following : **10×2=20**

- (a) What is abrasive jet machining ? Explain with a neat sketch. Also discuss types of abrasives used in the process.
- (b) Discuss the various process parameters that directly affect the performance of ultrasonic machining.



discuss the following :

- (i) Dielectric system
- (ii) Electrodes
- (iii) Power supply.

3 Attempt any **two** parts of the following : $10 \times 2 = 20$

- (a) With a neat sketch explain the working of an electron beam machine. List its advantages and disadvantages.
- (b) Explain process principle of LASER. Also, discuss in brief the difference between solid state lasers and gas lasers.
- (c) Discuss any two of the following for a laser beam machining process :
 - (i) Drilling
 - (ii) Cutting
 - (iii) Welding.

4 Attempt any **two** of the following : $10 \times 2 = 20$

- (a) Briefly discuss the types of under water welding, their salient features and limitations.
- (b) Briefly explain the working principle of explosive welding. What are the advantages and disadvantages of the system.
- (c) With a neat sketch show the various parts of a plasma arc nozzle. What are transferred and non-transferred plasma arcs.

- (a) Briefly discuss the principle of water hammer forming.
- (b) Differentiate between electro-discharge machining and electro-discharge forming.
- (c) What are the main process parameters of explosive forming ?
- (d) List the advantages of explosive compaction. How is it different from cladding.
- (e) Enumerate the applications of electromagnetic forming with examples.
- (f) Explain the working principle of high energy forming.

