Total No. of Questions : 10]

SEAT No. : ____

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[5561]-546
B.E. (Mechanical Engineering)
ADVANCED MANUFACTURING PROCESSES (Elective - IV)
(2015 Pattern) (Semetser - II)

Time :2½ Hours] ***[Max. Marks :70***

Instructions to the candidates:

1) ***All questions are compulsory i.e. Solve Q.1 or Q.2, solve Q.3 or Q.4, Solve Q.5 or Q.6, Solve Q.7 or Q.8, Solve Q.9 or Q.10.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***

Q1) a) Explain with neat stretch forming and list their applications. **[6]**

b) Explain the construction and working of Ultrasonic welding. **[4]**

OR

Q2) a) Explain with neat sketch Magnetic pulse forming and list their applications. **[6]**

b) List applications of adhesive bonding. **[4]**

Q3) a) Explain with sketch working principle of Abrasive Water Jet machining with the process parameter. **[6]**

b) Explain the process of underwater welding. **[4]**

OR

Q4) a) Explain with sketch working principle of wire electric discharge machining with the process parameter. **[6]**

b) Write short note on welding of plastics and composites. **[4]**

Q5) a) Explain how the ultrasonic micro machining carried out. **[6]**

b) Explain the challenges in micro and nano fabrication process. **[6]**

c) Write short note on Lithography. **[4]**

OR

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Q6) a) Explain the need of micro machining. **[6]**

b) Explain the process of focused Ion Beam Machining. **[6]**

c) Write short note on Diamond micro machining. **[4]**

Q7) a) Explain in detail post processing of parts manufactured by additive manufacturing processes. **[6]**

b) Explain the generalized additive manufacturing process. **[6]**

c) Write application of additive manufacturing processes in aerospace industry. **[4]**

OR

Q8) a) What are factors which play important role while designing the object which is manufactured by additive manufacturing? **[6]**

b) Explain any one Additive Manufacturing process with its principle, process steps and materials. **[6]**

c) Write application of additive manufacturing processes in medical technology. **[4]**

Q9) a) Explain in detail the importance of material characterization. **[6]**

b) Explain operating principle of Scanning Electron Microscopes with neat sketch. **[6]**

c) Describe the applications of microscope. **[6]**

OR

Q10)a) Explain operating principle of Atomic Force Microscopes with neat sketch. **[6]**

b) Explain with sketch operating principle of X-Ray Diffraction. Spectroscopy. **[6]**

c) Describe the applications of spectroscope. **[6]**

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