Total No. of Questions : 10]

SEAT No. :

P3276

[Total No. of Pages : 2

[5670]-545

B.E. (Mechanical Engineering)

ADVANCED MANUFACTURING PROCESSES

(2015 Pattern) (Semester - II) (Elective - IV) (402050A) (End Sem.)

Time : 2.30 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 sketch Incremental sheet metal forming and list their applications. **[6]**

b) How friction stir welding is useful in modern era? **[4]**

OR

Q2) a) Explain with sketch electro hydraulic forming. **[6]**

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

Q3) a) Explain with neat sketch Electro Jet Machining process with its process parameter. **[6]**

b) Write short note on Cryogenic welding. **[4]**

OR

Q4) a) Explain with neat sketch Shaped Tube Electrolytic Machining process with its process parameter. **[6]**

b) Explain with sketch basic principle of friction stir welding process. **[4]**

Q5) a) Explain the process of Focused Ion Beam Machining. **[6]**

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

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

OR

Q6) a) Explain the process of photochemical machining. **[6]**

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

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

P.T.O.

Q7) a) Discuss in detail different software issues in additive manufacturing. **[6]**

b) Explain the basic steps in additive manufacturing. **[6]**

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

OR

Q8) a) Explain in detail classification of additive manufacturing processes. **[6]**

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

c) Write short note on Design for Additive Manufacturing. **[4]**

Q9) a) Explain operating principle of Atomic force micro scope with neat sketch. **[6]**

b) Explain with sketch operating principle of Nuclear Magnetic Resonance spectroscopy. **[6]**

c) Explain operating principle of Scanning Tunnelling Microscope with neat sketch. **[6]**

OR

Q10) a) Explain operating principle of Energy-dispersive X-ray spectroscopy. **[6]**

b) Explain operating principle of Transmission Electron Microscope with neat sketch. **[6]**

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

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