B. TECH.
THEORY EXAMINATION (SEM–VIII) 2016-17
ADDITIVE MANUFACTURING

Time : 3 Hours   *Max. Marks : 100*

Note : Be precise in your answer. In case of numerical problem assume data wherever not provided.

SECTION – A

1. **Attempt all parts of the following questions:**   **10 x 2 = 20**
   (**a**)   Classify additive manufacturing.
   (**b**)   Differentiate between additive engg and CNC machining.
   (**c**)   What is a STL file?
   (**d**)   What is AM process chain?
   (**e**)   Define sheet lamination processes
   (**f**)   What are DED systems?
   (**g**)   Define quality of additive manufacturing
   (**h**)   What are engg design rules of additive manufacturing.
   (**i**)   What are the applications of additive manufacturing
   (**j**)   What are the future directions in additive manufacturing?

SECTION – B

2. **Attempt any five parts of the following questions:**   **5 x 10 = 50**
   (**a**)   Explain the evolution of rapid prototyping to additive manufacturing
   (**b**)   Why post processing is required in powder based AM process.
   (**c**)   What for is aerosol printing and bioplottter.
   (**d**)   Discuss the design of AM systems.
   (**e**)   What are the hybrid technologies used in AM process.
   (**f**)   What is the potential and resulting prospectus of AM design?
   (**g**)   What are the major software issues AM?
   (**h**)   Explain secondary rapid prototyping process.

SECTION – C

Attempt any two parts of the following questions: **2 x 15 = 30**
3   Explain the impact of AM on new product development.
4   Explain:
   (i)   Powder based fusion process
   (ii)   Material Jetting
   (iii)   Direct energy deposition process
5   What are the eight steps in additive manufacturing?