

15/05/19

Roll No.

--	--	--	--	--	--	--	--	--	--

B.E / B.Tech / B. Arch (Full Time) DEGREE END SEMESTER EXAMINATIONS, MAY / 2019

MANUFACTURING ENGINEERING / MECH

Semester 0

MF8071 Additive Manufacturing Technology (E&T)

(Regulation R 2012)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Explain the term ' Manufacturing'.
2. List any four different materials used in Additive Manufacturing Technology (AMT).
3. What is known as 'Staircase effect' in model building? Explain.
4. Describe any two CAD models used in AMT.
5. What are the limitations of SLA process and how are they modified.
6. List any four applications of laminated object manufacturing.
7. What is meant by Reverse Engineering?
8. What is the significance of 'net shaping' in LENS process.
9. Explain how AMT is used for orthopedic applications.
10. What is meant by Tissue Engineering?



Part – B (5 x 16 = 80 marks)

11. Explain, with suitable flow diagram, how AMT is applied for maxillofacial dental application for a patient. Draw necessary sketches. (16)

12. a) i) What are the needs for product development and explain how they are fulfilled. (8)

ii) Draw the life cycle of a product & explain it. (8)

(OR)

b) i) Give a detailed note with your own product for the development of breakaway support system. (8)

ii) Explain the advantages, algorithms and applications of the soft-wares such as MIMICS and MAGICS used in. (8)

13. a) Explain with suitable flow chart and figures, the process of reverse engineering for the development of a new type of mobile phone. (16)

(OR)

b) i) Draw suitable sketch and explain how a product is made in SLA process. (8)

ii) Explain the functioning of FDM process model and how the part orientations (any three types) are carried out. (8)

14. a) Discuss on how a metallic die for pressure die casting is made by SLS process. (16)

(OR)

b) Explain the principle, process advantage and application of 3-D printing. (16)

15. a) Compare the process features, advantages applications and limitations of LENS and Electron Beam Machining Process. (16)

(OR)

b) Discuss on why AMT is more advantageous than conventional machining processes for certain applications and vice - versa. (16)

