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VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. (CBCS) IV-Semester Advanced Supplementary Examinations, July-2019

Introduction to Additive Manufacturing
 (Open Elective-III)

Time: 3 hours

Max. Marks: 60

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 × 2 = 20 Marks)

1. Name the type of prototypes used in product development process.
2. List the benefits of AMT from a consumer point of view.
3. What is the principle of SLA process?
4. Name the 3 steps in the Solid Ground Curing (SGC) process.
5. Name two solid based AM systems.
6. List the weaknesses of Fused Deposition Modeling (FDM) Process.
7. What are the applications of Selective Laser Sintering (SLS) process?
8. List some limitations of 3DP systems.
9. What are the advantages of STL file?
10. What is done in the Pre-processing step of the Laminated Object Manufacturing (LOM) process?

Part-B (5 × 8 = 40 Marks)

- 11.a) Discuss the 4 areas on which the development of Rapid prototyping depends. [5]
- b) Discuss the benefits of Additive Manufacturing Technology to [3]
 - i) Marketing
 - ii) consumer
- 12.a) Discuss the layering technology used in SLA process. [5]
- b) What are the main components of the solid SGC system? [3]
- 13.a) Explain the 3 phases in the LOM process. [5]
- b) Discuss how Toyota used FDM technology for Design and Testing. [3]
- 14.a) Discuss the applications of SLS process. [5]
- b) List all the strengths of 3DP systems. [3]
- 15.a) Discuss the steps involved in the process chain of AMT. [5]
- b) Explain the SLA process with a neat sketch. [3]
- 16.a) Discuss how Xerox used Dimension series of FDM machines for prototype Design. [5]
- b) List the important hardware components in sinter station Pro SLS system. [3]
17. Answer any *two* of the following:
 - a) Direct benefits of AMT [4]
 - b) 3DP Process [4]
 - c) Roles of Prototypes in Engineering [4]

