Code No: 137AC

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, December - 2019
ADDITIVE MANUFACTURING TECHNOLOGY
(Mechanical Engineering)

Time: 3 Hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A **(25 Marks)**

1.a)	What is AM process chain?	[2]
b)	Define the term Rapid tooling.	[3]
c)	What are the recoating issues in SLA?	[2]
d)	What are the strengths of SGC?	[3]
e)	What are the needs for Rapid Tooling?	[2]
f)	What is DTM Rapid tool process?	[3]
g)	Write newly proposed formats for Rapid prototyping.	[2]
h)	What are the special features that you will get in 3D VIEW software?	[3]
i)	What is GIS? What is its use in Additive manufacturing?	[2]
j)	What are the applications of RP in Aerospace industry and in Engineering?	[3]

PART – B **(50 Marks)**

2. Additive manufacturing is the key component for the "future of manufacturing". Explain your understanding of the statement and outline the process that are in use today. [10]

OR

3. Describe historical development of Rapid prototyping and write the classification of RP Process. [10]

4. Discuss in detail the Solid grand cutting. [10]

OR

5. Explain in detail the FDM process with neat sketch. [10]

6. Write the applications, advantages and disadvantages of 3DP. Also define its working principle. [10]

OR

7. Explain with a neat sketch the working principle of Selective Laser Sintering process. [10]

8. Describe following terms:
a) Mimics b) 3D doctor c) Rhino d) Generic solution for STL repair
e) Tessellated model. [10]

OR

9. Discuss in detail the generation of STL file format along with methodology to repair the STL file using suitable example with neat sketch. [10]

10. Write the applications of RP in following categories:
a) Coin industry
b) Production of medical device
c) Arts and Architectures
d) Automotive industries
e) GIS [10]

OR

11. Discuss in detail the role of RP in Forensic science and Anthropology and in Visualization of Biomolecules. [10]

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