R16

Code No: 137AC

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year I Semester Examinations, July/August - 2023
ADDITIVE MANUFACTURING TECHNOLOGY
(Mechanical Engineering)

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

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	Outline historical developments of prototyping.	[2]
b)	Label the fundamentals of rapid prototyping.	[3]
c)	What are the advantages of Fused Deposition Modeling (FDM)?	[2]
d)	List the disadvantages of Solid Ground Curing (SGC).	[3]
e)	Define RTV Epoxy Tools.	[2]
f)	What is the powder based rapid prototyping systems?	[3]
g)	Label Invalid Tessellated Models.	[2]
h)	Outline 3 D doctor with RP (Rapid Prototyping).	[3]
i)	What are the RP applications in design?	[2]
j)	Outline RP applications in Engineering.	[3]

PART – B

(50 Marks)

2. Explain commonly used terms in rapid prototyping in detail. [10]

OR

3. Evaluate the classification of Rapid Prototyping (RP) process. [10]

4. Discuss photo polymerization, Layering technology, laser and laser scanning. [10]

OR

5. Analyze the specifications, Process and working principle of Laminated Object Manufacturing (LOM). [10]

6. Summarize the applications, advantages and disadvantages of Three dimensional Printing (3DP). [10]

OR

7. Explain classification of rapid tooling in detail. [10]

8. Interpret generic solution, other translators and newly proposed formats in STL file repairs. [10]

OR

9. Build the features of various RP software's of 3 D View, Velocity 2, Rhino and STL View 3 Data Expert. [10]

10. Interpret the rapid prototyping applications in aerospace industry, automotive industry and jewelry industry. [10]

OR

11. Evaluate the rapid prototyping applications in design and production of medical devices, Forensic Science and anthropology. [10]

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