U.S.N

P.E.S. College of Engineering, Mandya - 571 401

(An Autonomous Institution affiliated to VTU, Belagavi)

Eighth Semester, B.E. - Mechanical Engineering

Semester End Examination; Aug. / Sep. - 2020

Additive Manufacturing Techniques

Time: 3 hrs   Max. Marks: 100

Note: i) *Answer **TWO** full questions, selecting **ONE** full question from UNIT - I and UNIT - II.*

ii) *Answer any **THREE** full questions, choosing from UNIT - III, UNIT - IV and UNIT - V.*

UNIT - I

1 a.	Discuss about physical prototypes and its application.	8
b.	Describe generic process of additive manufacturing from CAD to part.	12

OR

2 a.	Sketch and explain the working principle of stereo lithography process.	12
b.	What are the merits and demerits of Solid Ground Curing process?	8

UNIT - II

3 a.	With the help of a neat sketch, describe Selective Laser Sintering process.	10
b.	Describe the LENS process with a neat sketch and mention its merits.	10

OR

4 a.	Explain with a neat sketch three phases of LOM process.	12
b.	Describe FDM process with a neat sketch.	8

UNIT - III

5 a.	Distinguish between Concept modeler and AM machine.	5
b.	Explain Thermo jet printer with a neat sketch and also mention its merits and demerits.	10
c.	With the help of a neat sketch, explain Object Quadra systems.	5
6 a.	Explain the fabrication of models using JP system 5 and list its applications.	12
b.	Describe Genisys Xs printer with a neat sketch.	8

UNIT - IV

7 a.	Describe classification of Rapid tools.	10
b.	Sketch and explain Silicone rubber tooling process.	10
8 a.	Explain DTM Rapid tool process and discuss about various materials used in this process.	10
b.	Explain Direct AIM Stereo lithography tooling and its merits and demerits.	10

UNIT - V

9 a.	Describe the process of making medical model using AM technique and two case studies.	12
b.	Discuss about limitations of AM in medical modelling.	8
10 a.	Describe the applications of AM in automotive industry.	10
b.	Discuss the applications of AM in aerospace industry.	10

* * * *