Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 70287

M.E./M.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Second Semester

CAD/CAM

CC 5292 – ADDITIVE MANUFACTURING AND TOOLING

(Common to M.E. Computer Aided Design/M.E. Engineering Design/ M.E. Product Design and Development)

(Regulations 2017)

Time : Three Hours | Maximum : 100 Marks

Answer ALL questions

PART – A (10×2=20 Marks)

1. What is virtual prototyping ?
2. Classify the additive manufacturing process.
3. Differentiate between geometry and topography.
4. What are the principle of Model Slicing ?
5. What is Solid Ground Curing (SGC) process ?
6. What are the process variable in FDM ?
7. What are the powder phase structures available in Selective Laser Sintering ?
8. Why is accuracy important in SLS ?
9. Compare direct and indirect fabrication processes.
10. Classify Rapid tooling.

PART – B (5×13=65 Marks)

11. a) i) Briefly discuss AM process chain. (8)
    ii) List out the benefits and applications of AM. (5)

(OR)

b) Explain the evolution of RP to AM.

12. a) Compare wire frame, surface and solid model with suitable example.

(OR)

b) Analyze reverse engineering technique with respect to digitization and explain.

13. a) Discuss about various FDM materials and applications of FDM.

(OR)

b) Explain about pre build, part build and post-build process of SLA.

14. a) i) Differentiate between direct and indirect SLS. (7)

ii) Demonstrate the applications of SLS and its processing techniques. (6)

(OR)

b) Explain the entire process of LENS and its advantages, limitations and applications with a case study.

15. a) Describe the applications of rapid tooling in automotive and aerospace industries.

(OR)

b) Discuss any four types of finishing processes adopted for rapid prototypes.

PART – C (1×15=15 Marks)

16. a) Explain the concept of Production tooling with a case study.

(OR)

b) What is the RP/AM wheel ? Explain its four primary aspects.

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