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18MCM15

First Semester M.Tech. Degree Examination, Dec.2018/Jan.2019
Rapid Prototyping

Time: 3 hrs.

Max. Marks: 100

Note: *Answer FIVE full questions, choosing*
ONE full question from each module.

Module-1

1   a. Define prototype, explain the classification of rapid prototyping methods. **(10 Marks)**
    b. Explain in detail, the need for compression in product development highlighting the role of rapid prototyping. **(10 Marks)**

OR

2   a. Explain the survey of applications, and growth of RP industry. **(10 Marks)**
    b. With neat sketch, explain stereo lithography systems, mention its advantages and disadvantages. **(10 Marks)**

Module-2

3   a. With neat sketch explain the working of selective laser sintering process. **(10 Marks)**
    b. Briefly explain the process parameters of selective laser sintering and mention its applications. **(10 Marks)**

OR

4   a. With neat sketch explain fusion deposition modeling. **(10 Marks)**
    b. Explain the process parameters in fusion deposition modeling and applications. **(10 Marks)**

Module-3

5   a. With neat sketch explain solid ground casting and mention its advantages. **(10 Marks)**
    b. What are concept modelers? Explain steps involved in fabrication of model by JP system 5 with neat sketches. **(10 Marks)**

OR

6   a. Explain with neat sketch, the principle of working of laminated object manufacturing. **(10 Marks)**
    b. Explain : i) Sanders model maker ii) 3–D printer. **(10 Marks)**

Module-4

7   a. Explain the role of indirect methods in tool production and explain silicon rubbers tooling. **(10 Marks)**
    b. Explain : i) Aluminum filled expoxy tool ii) Spray metal tooling. **(10 Marks)**

OR

8   a. Explain : i) Direct Aces Injection Moulds(AIM)   ii) Copper polyamide (PA). **(10 Marks)**
    b. Explain: i) Cast kirksite tooling   ii) 3 – D keltool. **(10 Marks)**

Module-5

9   a. Write a note on :   i) Magics software   ii) Minics software. **(10 Marks)**
    b. Write the applications in pattern for investment and vacuum casting. **(10 Marks)**

OR

10 a. Explain the applications in functional models and art models. **(10 Marks)**
    b. Write the applications in medical models and engineering analysis models. **(10 Marks)**

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