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Code No. : 21803

**VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD**  
**M.E. (Mech. Engg.: CBCS) I-Semester Main Examinations, January-2018**

(Advanced Design & Manufacturing)

**Computer Integrated Design and Manufacturing**

Time: 3 hours

Max. Marks: 60

*Note: Answer ALL questions in Part-A and any FIVE from Part-B*

**Part-A (10 × 2 = 20 Marks)**

1. What is the role of CAD in product development?
2. What are the advantages of solid modeling?
3. What are preparatory codes? Write any two G codes with their significance.
4. Name the graphic libraries.
5. What are the advantages of rapid prototyping?
6. What is reverse engineering? Enumerate its applications.
7. Specify the material handling equipment's and its requirements.
8. List the objectives of master production scheduling.
9. Classify the various types of communication systems in CIM.
10. Differentiate automation and CIM.

**Part-B (5 × 8 = 40 Marks)**

*(All sub-questions carry equal marks)*

11. a) Describe the product development lifecycle using a flowchart.  
b) Explain B-rep and C-rep approaches of solid modeling using suitable example.
12. a) What is DNC? Explain BTR and SMCU types of DNC system.  
b) What are needs and challenges of Agile manufacturing?
13. a) Explain the concept of 3D printing with a neat sketch.  
b) What do you mean by automated inspection? Differentiate on-line and off-line type of inspection with example.
14. a) What are the objectives of material requirement planning? Explain cost planning and control.  
b) What is just in time concept in manufacturing? Discuss the advantages of JIT in a typical manufacturing system.
15. a) Explain economy of scale and economy of scope in CIM.  
b) What are the advantages of implementation of CIM in manufacturing plant?
16. a) Discuss the importance of graphic standards in CAD/CAM. Explain any one graphic standard.  
b) Explain ACC and ACO and its limitations.
17. Answer any *two* of the following:
  - a) Explain the role of Rapid prototyping in manufacturing. Discuss the issues in RP.
  - b) Explain the concept of Bottom up planning. How this concept is implemented in a typical manufacturing unit?
  - c) Describe the different database systems used in the implementation of CIM.

