7660

BOARD DIPLOMA EXAMINATION, (C-20)

OCTOBER/NOVEMBER—2023

DME – FIFTH SEMESTER EXAMINATION

COMPUTER AIDED MANUFACTURING SYSTEMS

Time : 3 Hours]   [*Total Marks* : 80

PART—A   3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. List out three advantages of group technology.

2. State the role of computers in manufacturing.

3. Draw block diagram of CNC system.

4. Define numerical control.

5. What is part program?

6. List out any three differences between primary and secondary material handling systems.

7. Define a Robot.

8. Define Flexible Manufacturing System (FMS).

9. State any three benefits of CIMS.

10. Define rapid prototyping.

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PART—B

Instructions : (1) Answer either *(a)* or *(b)* from each question.

(2) Each question carries **eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. *(a)* Explain the features and working of CNC coordinate measuring machine.

(OR)

(b) Explain the components of a NC system with the help of a neat sketch.

12. *(a)* List and explain any four preparatory functions used in manual part programming.

(OR)

(b) List out various geometrical and motion statements used in APT language. What are the advantages of using APT over manual part programming?

13. *(a)* Explain the industrial applications of Robots.

(OR)

(b) List various types of AGV and explain about any two of them with neat sketches.

14. *(a)* Explain the functions of principal components of an FMS.

(OR)

(b) Describe CIMS by showing the principal components.

15. *(a)* Define Reverse Engineering. State its reasons for a part.

(OR)

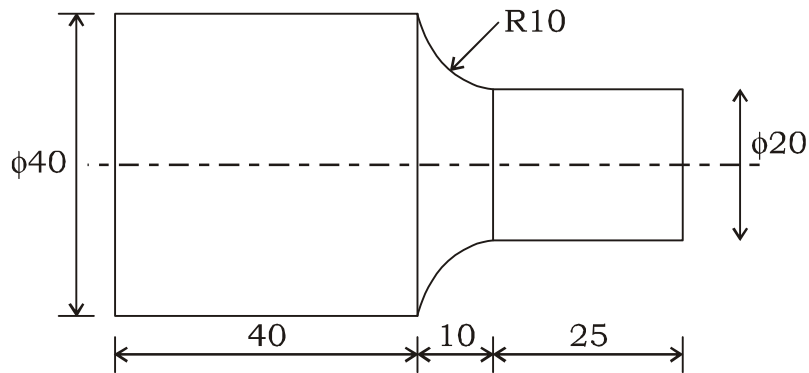*(b)* Explain the RP Technique of Three Dimensional Printing (3DP).

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Instructions :   (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

16. Develop a CNC part program with appropriate assumptions for the following job :

Raw material size is $\phi\,40 \times 75$ mm

(All dimensions are in mm)

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