* 4760 *

C14–M–604

4760

BOARD DIPLOMA EXAMINATION, (C–14)

MARCH/APRIL—2017

DME—SIXTH SEMESTER EXAMINATION

COMPUTER-AIDED MANUFACTURING

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. Define CAM. List two benefits of CAM. 1+2=3

2. Write the inputs of material requirement planning (MRP–I). 3

3. List out six advantages of CNC. 3

4. Write three differences between CNC and DNC. 3

5. List different types of slideways used in CNC machines. 3

6. Define part programming. Mention its types. 1+2=3

7. What is a miscellaneous function? Give two examples. 1+2=3

8. List three objectives of CIMS. 3

9. Write the limitations of FMS. 3

10. What is a robot? State two advantages of robots. 1+2=3

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.

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

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

11. *(a)* Explain six functions of CAM. 6

(b) State any four advantages of a computer-integrated production system. 4

12. Explain the features of MRP–I and MRP–II with block diagrams. 5+5

13. *(a)* Explain briefly with neat sketch the features of CNC machining centre. 3+3

(b) Explain briefly about automatic tool change. 4

14. Explain in detail the manufacturing methodology of NC system. 10

15. Explain briefly *(a)* linear interpolation and *(b)* circular interpolation. Give two examples for each. 4+4+1+1

16. Write a CNC manual program for executing a 'step turning' operation on a mild steel rod to reduce the diameter from 42 mm to 30 mm for a length of 54 mm on a CNC lathe. 10

17. Explain the functions of components of FMS with a neat sketch. 5+5

18. What are the end effectors? Explain them with neat sketches. 2+8

★ ★ ★