

Code: 5G562

III B.Tech. II Semester Supplementary Examinations May/June 2022

CAD / CAM

(Mechanical Engineering)

Max. Marks: 70

Time: 3 Hours

Answer any five full questions by choosing one question from each unit (5x14 = 70 Marks)

UNIT-I

1. a) Describe the product cycle followed in a CAD/CAM system 7M
- b) What are the designs related tasks performed by modern computer? Explain with block diagram 7M

OR

2. Briefly explain the conventional process of the product cycle in the conventional manufacturing environment. 14M

UNIT-II

3. Explain various types of wireframe entities. Derive the parametric equations of the four analytical wireframe models? 14M

OR

4. a) What is the need for concatenation of transformations? Explain what care should be taken in such cases. 6M
- b) Describe briefly the following methods of surface modeling with a few application examples:
i. Revsurf ii. Tabcyl iii. Bicubic surface iv. Bezier surface 8M

UNIT-III

5. a) Describe various coordinates systems and elements of NC 7M
- b) Give the advantages and disadvantages of Numerical control of machine tools. 7M

OR

6. a) Explain linear and circular interpolations in CNC systems 7M
- b) What is manual CNC part programming? Explain with an example. 7M

UNIT-IV

7. a) Discuss the importance of materials handling system in FMS. 7M
- b) Discuss the principle of variant process planning. 7M

OR

8. a) Discuss how group technology is used in designing manufacturing cells. 7M
- b) Sketch the layout of a typical FMS and explain the important subsystems. 7M

UNIT-V

9. a) Discuss the important benefits of computer-aided quality control. 7M
- b) Describe the features of a flexible inspection system. 7M

OR

10. a) Explain the method of part inspection using a CMM. 7M
- b) What are the different material handling systems used in industry? Discuss in details. 7M
