**UNIT-I**

1. Describe the product cycle followed in a CAD/CAM system.
2. Explain the software configuration of a graphics system.
3. Discuss CAD/CAM hardware components
4. Explain about different display devices.
5. Explain 2D transformation matrix for translation, rotation and scaling with a neat diagram.
6. What is the necessity of transformation? Give 3D homogeneous transformation matrix for
	1. XY-Flip (ii) YZ-Flip (iii) O-Flip
7. Compare traditional and the CAD/CAM based product cycle.
8. Explain the basic structure of a computer
9. Explain product cycle with the implementation of CAD/CAM technology
10. List and explain any three input and display devices.
11. Explain about raster scan graphics coordinate system
12. Discuss the various display devices that are used for displaying graphic information? the merits and demerits of each one.
13. Discuss the influence exerted by the computers on the manufacturing
14. The unit square with vertices A (1, 1), B (2, 1), C (2, 2), and D (1, 2) is transformed in the following sequence.
	* 1. Scaled about the origin by factors of 4 and 2 in the x- and y- directions.
		2. Rotated about point B through 900. What are the coordinates of the vertices of transformed geometry?
15. Explain 3D transformation matrix for translation, Rotation and Scaling with neat figures. Explain the classification of projections. Classify the memory types and storage devices used in a computer system.

**UNIT-II**

1. List out the requirements of geometric models and explain the need of geometric modeling?
2. Explain the B-spline curve with a neat figure and state the advantages.
3. Discuss the different modeling techniques in CAD.
4. Explain B-spline surface with a neat figure and state the advantages of this surface over Bezier surface.
5. Explain various requirements for the geometry model. Also describe Euler theory in detail.
6. A line segment with endpoints P1(2,4) and P2(20,5) lying in xy plane. Rotate a line about the x axis. Which surface can be generated? Find the point on the surface at u = 0.3 and φ = π/2.
7. Explain parametric and non-parametric representation of the following analytical curves

i) Lines ii) Circle iii) Ellipse iv) Parabola v) Hyperbola

1. Explain Bezier curve with a neat sketch. Explain its advantages and limitations
2. Explain any two hidden surface removal algorithms.
3. Explain about the surface representation methods and entities.

**UNIT – III**

1. How do you define a solid model? Explain various solid modeling schemes with their Applications and limitations.
2. Explain various display control commands in drafting and modeling systems.
3. Define Numerical Control. Why computer aided programs are preferred for NC machine
4. Explain the role of a Part Programmer in Manual Part Programming Method and Computer
5. Write any Four G-Codes and M-Codes. .



1. Describe various commonly used primitives for solid modeling and explain the Boolean

operations.

1. Explain various editing commands in drafting and modeling systems.

**UNIT – IV**

1. Define Group Technology.
2. List out the benefits of using Group Technology.
3. Explain about coding and classification systems.
4. Discuss about the Product Flow Analysis.
5. Explain machine cell design in group technology.
6. Define Part Families
7. Discuss about the Opitz coding systems
8. Explain Generative and Retrieval Process Planning
9. Discuss Retrieval Process Planning
10. Explain process planning & its benefits in detail.

**UNIT – V**

1. Discuss the various methods available for the integration of Computer Aided Quality Control with CAD/CAM systems.
2. Enumerate Benefits of Computer Aided Inspection.
3. Explain the various activities related to computer aided quality control with a block diagram.
4. Discuss the various steps involved in the inspection procedure.
5. Define Inspection and Testing
6. List out the objectives of computer aided quality control?
7. Explain optical inspection methods in computer quality control.
8. Discuss the importance of integration of CAQC with CAD/CAM.
9. Explain general types of non-optical non-contact inspection methods?
10. Explain the method of Part inspection using Coordinate Measuring Machine?

**UNIT – VI**

1. List out the objectives and potential benefits of Computer Integrated Manufacturing Systems
2. Explain the various control system used in CIM
3. Define CIM
4. What are the different basis of classifying production systems according to the quality and variety of product?
5. Explain the elements of CIM in a manufacturing unit.
6. Classify the types of manufacturing systems? Explain with the help of block diagrams.
7. Discuss various types of data files in the CIM system.
8. Explain the various material handling systems used in CIMS with a neat sketch.