

COMPUTER AIDED DESIGN

Unit-1 {Part-B}

Fundamentals Of Computer Graphics

- 1. Explain Product Cycle Model with flow chart.**
- 2. Describe Various Stages of design process.**
- 3. Differentiate sequential and concurrent engineering in detail.**
- 4. Describe CAD Technology.**
- 5. Explain system architecture with neat sketch.**
- 6. Briefly explain various keywords in computer graphics.**
- 7. Describe various common coordinate system with sketch.**
- 8. Explain 3-D Transformation with matrix.**
- 9. Explain Bresenham's line drawing algorithm.**
- 10. Describe Z – depth clipping.**
- 11. Explain Cohen Sutherland algorithm.**
- 12. Describe the Concept behind the Sutherland-Hodgman Algorithm.**
- 13. Explain 'Viewing Transformation' matrix with Neat sketch.**

Unit-2 {Part-B}

Geometric Modeling

- 1. Explain various functions of 'Hermite' curve with neat sketches.**
- 2. Explain different types of Bezier curves with construction details.**
- 3. Describe various properties of Bezier curve.**
- 4. Explain B-spline curves and characteristics of B-spline.**
- 5. Describe various surface entities with neat sketch.**
- 6. Describe the construction of 'coons patch'.**
- 7. Describe the 'Bicubic patches' with Mathematical Function.**
- 8. Explain Bezier surface with its properties.**
- 9. With Neat sketch explain the construction of B-spline surface.**
- 10. Describe the CGS Boolean operations with Suitable Example.**
- 11. Explain B-rep Elements.**
- 12. Describe the Euler's operations.**
- 13. Explain B-rep data structure.**

Unit-3 {Part-B}

Visual Realism

- 1. Describe Priority algorithm with example.**
- 2. Explain Z –buffer algorithm with its operations.**
- 3. Explain the basics operations in painter’s algorithm.**
- 4. Describe the Warnock algorithm with its basic operations.**
- 5. With neat sketch explain Ray-tracing algorithm.**
- 6. Explain various shading techniques with sketch.**
- 7. Describe the various light sources with example.**
- 8. Explain how distance fall off to be calculated.**
- 9. Describe various color models with neat sketch.**
- 10. Explain 2-D and 3-D animation.**
- 11. Describe ‘Pseudo code’ algorithm for 2-D animation.**

Unit-4 {Part-B}

Assembly Of Parts

- 1. Describe Bottom Up and Top down assembly design with example.**
- 2. Derive the interference free matrix with example.**
- 3. List out various fundamental rules for geometric tolerance.**
- 4. Explain tolerance Stack-up with example.**
- 5. Describe RSS for tolerance analysis with RSS cube.**
- 6. Discuss importance of tolerance analysis.**
- 7. Explain the calculating method for centre of gravity.**
- 8. Describe the calculating of moment of inertia.**
- 9. Explain the calculation of product of inertia.**
- 10. List out and describe various mass computed properties for a cross section.**
- 11. Explain Virtual Simulation.**
- 12. Discuss of the applications of simulation.**
- 13. Describe CAD interference checking capabilities.**

Unit-5 {Part-B}

CAD Standards

- 1. Describe Graphics standards in Graphics programming.**
- 2. Explain various layers of GKS.**
- 3. Describe GKS output primitives in detail.**
- 4. Explain OpenGL with schematic diagram.**
- 5. Explain the features of OpenGL.**
- 6. Discuss Data Exchange Standards in detail.**
- 7. Explain evolution of Data Exchange Format.**
- 8. Describe the structure of IGES file.**
- 9. Explain IGES file extraction methodology.**
- 10. Explain IGES entities with format.**
- 11. Write an algorithm for extracting geometric entities
From CAD file.**
- 12. Explain IGES Common testing methods.**
- 13. Describe the components of step with geometric data
Structure.**
- 14. Explain STEP architecture with neat sketch.**
- 15. Describe the CGM with its elements.**
- 16. Compare CGM and CGI.**