Model Question Paper -1
Fifth Semester
Mechanical Engineering

ME6501 – COMPUTER AIDED DESIGN
(Regulation 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions

PART A – (10 X 2 = 20 marks)

1. Differentiate preliminary design and detailed design.
2. What is 'Rendering'?
3. List out the various Bezier curves based on control points.
4. Write down the advantages and limitations of surface modeling.
5. List out the various visualization approaches.
6. Compare Gouraud and Phong shading.
7. What is mating conditions?
8. Write short note on geometric tolerance.
9. Write down primary purpose of the graphics standard.
10. What is GKS Cell array?

PART – (5x16 = 80 marks)

11. a.   (i) Describe various stages of design process.
            (ii) Explain system architecture with neat sketch.
                            OR
    b.   (i) Briefly explain various keywords in Computer graphics.
            (ii) Describe various common coordinate system with sketch.

12. a.   (i) Explain different types of Bezier curves with construction details.
            (ii) Describe various surface entities with neat sketch.
                            OR
    b.   (i) Describe the construction of 'Coons patch'.
            (ii) Describe the 'Bicubic patches' with mathematical function.

13. a.   (i) Explain Z-buffer algorithm with its operations.
            (ii) Explain the basic operations in Painter's algorithm.
                            OR
    b.   (i) With neat sketch explain Ray-tracing algorithm.

(ii) Explain various shading techniques with sketch.

14. a.   (i) Describe Bottom Up and Top Down assembly design with example.
            (ii) List out various fundamental rules for Geometric tolerance.

<div align="center">OR</div>

    b.   (i) Describe RSS for tolerance analysis wit RSS cube.
            (ii) Describe the calculation of Moment of Inertia.

15. a.   (i) Explain various layers of GKS.
            (ii) Explain OpenGL with schematic diagram.

<div align="center">OR</div>

    b.   (i) Describe the structure of IGES file.
            (ii) Compare CGM and CGI.

Model Question Paper -2
Fifth Semester

Mechanical Engineering

ME6501 – COMPUTER AIDED DESIGN
(Regulation 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions

PART A – (10 X 2 = 20 marks)

1. Define Cartesian coordinate system.
2. Differentiate 2D and 3D clipping.
3. Write down Euler's formula.
4. Write down the advantages of B-rep.
5. Write a matrix for conversion from RGB to YIQ.
6. Define key framing.
7. Define Radius of gyration.
8. Write short note on 2D collision.
9. Write the topology of IGES.
10. What is CALS?

PART – B (5 x 16 = 80 marks)

11. a.   (i) Explain 3-D transformation with matrix.
           (ii) Explain Bresenham's line drawing algorithm.
                           OR
    b.   (i) Describe Z – depth clipping.
           (ii) Explain Cohen Sutherland algorithm.

12. a.   (i) Explain the Bezier surface with its properties.
           (ii) With neat sketch explain the construction of B-Spline surface.
                           OR
    b.   (i) Explain B-rep elements.
           (ii) Explain B-rep data structure.

13. a.   (i) Describe the various light sources with example.
           (ii) Explain how distance fall off to be calculated.
                           OR
    b.   (i) Describe various color models with neat sketch.
           (ii) Describe 'Pseudo code' algorithm for 2-D animation.

14. a.   (i) List out and describe various mass computed properties for a cross section. (ii) Explain Virtual simulation.

OR

b.   (i) Discuss of the applications of simulation.

(ii) Describe CAD interference checking capabilities.

15. a.   (i) Explain IGES common testing methods.

(ii) Describe the components of STEP with geometric Data structure.

OR

b.   (i) Explain STEP architecture with neat sketch. (ii) Describe the CGM with its elements.