G 7359 (Pages : 2) Reg. No.....

Name.....

M.C.A. (AFFILIATED COLLEGES) DEGREE EXAMINATION, APRIL 2012

Third Semester

COMPUTER GRAPHICS

(New Scheme—2007 Admission onwards)

Time : Three Hours Maximum : 75 Marks

Part A

Answer any **ten** *questions.*

1. List different output devices in Graphics workstation.
2. Write a note on lines and their attributes.
3. What is Antialising ? What is its need ?
4. Perform a 45° rotation of a line defined by cordinates A (0, 0) and B (5, 12) about two origin.
5. Give the steps involved in window to viewport transformation.
6. Give the 3D Rotation matrices.
7. Explain the polygon mesh in defined and represented.
8. What are Fractals ? What are their properties ?
9. What are the techniques used for hidden surface removal and detection ?
10. What is Extended light sources ?
11. List few properties of Bezier curves.
12. Explain polygon rendering and list their methods.

(10 × 3 = 30 marks)

Part B

Answer **all** *questions.*
All questions carry equal marks.

13. (a) Write the DDA Algorithm for drawing a line and trace the same for a line segment P_1 (1, 1) and P_2 (8, 5).

Or

(b) Describe mid point circle generation algorithm, deriving necessary equations.

14. (a) What is Boundary fill, flood fill and soft fill ? Explain.

Or

(b) With figures explain, reflections and shear of the object about different axis.

Turn over

15. (a) Differentiate between object space methods and Image space methods for visible surface detection and explain.

Or

(b) Perform 45° rotation of a triangle of vertices A (0, 0) B (1, 1) C (5, 2) :

(i) about origin.

(ii) about the point (– 1, – 1).

16. (a) Obtain the composite transformations to translate and object about an arbitrary axis in 2D plane.

Or

(b) Explain the techniques used for hidden surface removal and detection.

17. (a) With an algorithm, explain the procedure to perform line clipping using N–L–N algorithm.

Or

(b) Describe Bezier method of curve generation.

(5 × 9 = 45 marks)