Roll No ....

CS-504

B.E. V Semester

Examination, December 2015

Computer Graphics and Multimedia

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit-I

1. a) Discuss application of Computer Graphics.

   b) Briefly describe DDA algorithm.

   c) Differentiate between Raster Scan and Random Scan.

   d) Write the steps of mid-point circle generation algorithm and use it to find the pixels would be needed to put on to generate an arc of circle with outer origin laying between $(-9, 0)$ and $(0, 9)$.

OR

Discuss following in brief :

i) Character generations

ii) Boundary fill and flood fill

Unit-II

2. a) Why is homogenous co-ordinates used for transformation computation in computer graphics?

b) Briefly describe 2-D transformations.

c) Define the term clipping. Name any two algorithms for line clipping.

d) Explain in detail the Cohen-Sutherland line clipping algorithm with an example.

OR

Find normalized transformation that map a window defined by the vertius P(1, 1), Q(5, 3), R(4, 5), S(0, 3) into a viewport that is the entire normalized device system.

Unit-III

3. a) Briefly describe 3D translation, rotation and scaling.

b) Discuss Z-buffer algorithm.

c) Distinguish between parallel and perspective projection.

d) A Bezier curve is to be drawn using the rectangular points A(40, 40), B(10, 40), C(60, 60) and D(60, 0). Find the equation of Bezier curve and midpoint of this curve. Also draw its rough sketch.

OR

Explain the following :

i) Color models

ii) Phong shading and Gouraud shading.

Unit-IV

4. a) What is multimedia? Explain.

b) Briefly describe the characteristics of multimedia presentation.

c) Briefly describe the video file formats.

d) What are the components of multimedia system? In what format are these data stored in a computer? How they are linked with each other?

OR

Explain the following :

i) Application of multimedia

ii) Digital video processing

Unit-V

5. a) What is Animation? Explain.

b) Explain the principle of animation.

c) What is compression? Discuss the advantages of compression.

d) What steps are involved in compression of images? What are different types of compression techniques? Briefly explain one of them.

OR

Briefly describe lossless and lossy compression techniques.

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