

Roll No

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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

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Unit-II

2. a) Why is homogenous co-ordinates used for transformation computation in computer graphics?
- b) Briefly describe 2-D transformations. rgpvonline.com
- 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 vertices $P(1, 1)$, $Q(5, 3)$, $R(4, 5)$, $S(0, 3)$ 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. rgpvonline.com
- 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.
