MCA - 403

MCA. IV Semester

Examination, June 2014

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 question 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 in brief the requirement of hardware for computer graphics. 2

b) Differentiate pixel, frame buffer and refresh rate in short. 2

c) Explain raster scan display with diagram. 3

d) Trace a DDA algorithm for the line which has two End points A(1, 1) and B(8, 5). Find all pixel positions. 7

OR

Find all points from 90° to 45° using bresenham's circle drawing algorithm for circle that has centre (0,0) and radius is 25. 7

Unit - II

2. a) Write and briefly discuss boundary fill algorithm. 2

b) What do you mean by aliasing effect? 2

c) Explain shearing 2D transformation with example. 3

d) What will be new coordinate of a square A(0,0), B(5,0) C(5,5), D(0,5) that is rotate 90° about the centre of the square. Rotation should be in anticlockwise direction. 7

OR

What do you mean by composite transformation? Perform the reflection of a point (5,5) about a line $y = x+2$. 7

Unit - III

3. a) Discuss in short RNB color model. 2

b) Discuss in short window to viewport clipping. 2

c) Discuss with example sutherland hodgman polygon clipping method. 3

d) Perform mapping of a point (2,3) in window to viewport, where window is defined by its lower left corner is (0,0) and upper right corner is (5,5) and viewport is defined by its lower left corner (1,1) and upper right corner is (6,6). 7

OR

Discuss in detail with example Cohen Sutherland line clipping algorithm with all necessary conditions. 7

Unit - IV

4. a) What do you mean by hidden surface removal problem? 2

b) Write 3D transformation rotation matrix. 2

c) Discuss the term vanishing points and foreshortening features of perspective projection. 3

d) Find the midpoint of a Bezier curve which is approximated by control points $P_0(1,1)$ $P_1(2,2)$ $P_2(5,2)$ and $P_3(1,7)$. 7

OR

Explain the B-spline curve with its properties. How it is differ from Bezier curve. 7

Unit - V

5. a) Write the applications of multimedia. 2

b) Write and discuss in short the multimedia elements. 2

c) What are the different file format of multimedia files? 3

d) What do you mean by multimedia tool? Explain presentation tools in detail. 7

OR

Discuss the following :

i) SCSI ii) Authoring tool 7

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