NEW

2017

BCA

6th Semester Examination

COMPUTER GRAPHICS & MULTIMEDIA

PAPER—3203

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer *Q. No. 1* and any *four* from the rest.

1. Answer any *five* questions : 5×2

(a) What do you mean by resolution of screen ?

(b) Define Aspect ratio.

(c) What do you mean by Animation ?

(d) Define frame buffer.

(e) What is 3D-Reflection ?

(f) What is Digitizer ?

(g) Briefly, describe about Multimedia.

(h) What do you mean by shearing ?

2. (a) Describe Bresenham's line drawing algorithm.

(b) Use this algorithm to find points on a line between (2, 2) and (10, 4).

(c) Briefly describe about CRT monitor. 7+4+4

3. (a) Describe basic 2D transformations with examples.

(b) Scale a square at [(1,1), (4,4)] by scaling factor 2 and 4 with respect to the vertex at (1,1).

(c) What is anti-aliasing ? 5+7+3

4. (a) What do you mean by 3D-Translation ? Establish 3D-Translation in matrix form. 5

(b) Derive Cubic Bezier curve having 4 control points. 10

5. (a) Write down the difference between Raster Scan system and Random Scan system. 5

(b) Briefly describe about Animation. 3

(c) What do you mean by lossless and lossy data compression ? 5

(d) What are the difference between hypertext and hypermedia ? 2

6. (a) What is pivot point ? Write down a matrix to rotate a point $P(x, y)$ about an arbitrary point.

(b) Prove that if rotation angle is θ the transformation matrix formed when multiplied by the transformation matrix formed when angle is $(-\theta)$ is equal to identity matrix.

(c) What are the difference between windowport and veiwport ? (2+5)+4+4

7. (a) Explain Boundary fill algorithm.

(b) What is reflection ? Write down a matrix to reflect a point $P(x, y)$ about the straight line $y = -x$.

(c) Explain Shadow Mask method of a CRT.

5+5+5

8. Write short notes (any *three*) : 3×5

(a) Digital video ;

(b) Morphing ;

(c) Spline surves ;

(d) HDTV ;

(e) Polygon filling.

[*Internal Assessment : 30*]