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Roll No .....

IT-6003 (CBGS)

B.E. VI Semester

Examination, May 2018

Choice Based Grading System (CBGS)

Computer Graphics and Multimedia

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Describe the working of raster display tube. How different grey levels are incorporated in it?
   b) Explain the working principles of keyboard, mouse and digitizing camera.

2. a) Differentiate between interlaced and non interlaced monitors, what is the fraction of the total refresh time per frame spent in terrace of electron beam for a non interlaced raster system with resolution of 1280×1024, a refresh rate of 60 Hz, a horizontal retrace time 5 microseconds and a vertical retrace time of 500 microseconds?
   b) Explain in detail about color CRT monitors and flat panel displays with suitable diagrams.

3. a) Describe the composite transformation of two successive translations for three dimensional objects.
   b) State the algorithm to draw a line from the top right corner of your screen to the bottom left corner (a diagonal) using Bresenham's line drawing algorithm and also show a cross diagonal in a rectangle.

4. a) Find the transformation required to reflect a polygon whose vertices are A(–1, 0), B(0, –2), C(1, 0) and D(0, 2) about line $y = x + 2$. Find reflected image.
   b) Describe the Bezier form of the cubic polynomial curve segment. Give a suitable flatness test for Bezier curve segment undergoing recursive sub division.

5. a) Write down the transformation matrix for shearing Z-axis parallel projection method.
   b) Explain Line clipping Algorithms and Comparison.

6. a) Rotate a triangle A(0, 0). B(2, 2), C(4, 2) about the origin and about p(–2, –2) as by an angle of 45°.
   b) Explain the 3D representation in memory and compare with 2D representation.

7. a) Name various color models and explain each of them.
   b) Explain Multimedia tools and the Multimedia authoring tools.

8. a) Describe the Phong Specular reflection model with Fresnel's law of reflection.
   b) Explain the working of JPEG, DIB and MPEG file formats.

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