B4.4-R4: COMPUTER GRAPHICS & MULTIMEDIA

NOTE:

1. **Answer question 1 and any FOUR from questions 2 to 7.**
2. **Parts of the same question should be answered together and in the same sequence.**

Time: 3 Hours **Total Marks: 100**

1.

a) Define geometric and co-ordinate transformations.
b) What is Luma-Chroma Principle?
c) How sound card processes MIDI file?
d) What are the different animation file types typically included on the web?
e) What are Raster-Scan Systems?
f) What are the differences between point and line clipping?
g) Differentiate between raster and vector graphics and mention application software names.

(7x4)

2.

a) Describe simple seed fill algorithm with a suitable example?
b) What are the applications of Rotation about an Axis parallel to a coordination axis and also find transformation matrix for it?

(9+9)

3.

a) Discuss and explain midpoint subdivision algorithm with suitable examples.
b) What is pseudo animation? What is Sprite?

(12+[3+3])

4.

a) What is the coordinate of a unit cube after taking reflection about zx-plane?
b) Illustrate the I, B and P frame technique of MPEG video encoding in detail.

(8+10)

5.

a) Consider a raster system with the resolution of 1024 x 768 pixels and the color palette calls for 65,536 colors. What is the minimum amount of video RAM that the computer must have to support the above-mentioned resolution and number of colors?
b) Why is Gouraud shading also referred to as interpolation shading?
c) Develop the specular reflection model for a single light source falling on highly polished surface.

(5+4+9)

6.

a) What are the important properties of Bezier Curve? Differentiate between interpolation splines and approximation splines? What do you mean by parabolic splines? What is cubic spline?
b) Elucidate Painter's Algorithm.

(10+8)

7.

a) Give the JPEG encoding and decoding block diagram.
b) How MPEG 7 is different from MPEG 4?

(12+6)