May-June 2007
Bachelor of Computer Application (BCA) Examination
VI Semester

Computer Graphics and Multimedia

Time 3 Hours]   [Max. Marks 50

Note : *Attempt any five questions. All questions carry equal marks.*

1. (a) Differentiate between Raster Scan Displays and RandomScan Displays.

   (b) Consider three different raster systems with resolution of 640 by 480, 1280 by 1024, and 2560 by 2048. What size frame buffer (in bytes) is needed for each of these systems to store 12 bits per pixel ? How much storage is required for each system if 24 bits per pixel are to be stored ?

2. (a) Describe the circle generating algorithm.

   (b) Show that the composition of two rotations is additive by concatenating the matrix representation for $R(\theta^1)$ and $R(\theta^2)$ to obtain $R(\theta^1) \cdot R(\theta^2) = R(\theta^1 + \theta^2)$.

3. (a) Derive the transformation matrix for scaling an object, by a scaling factor s in a direction defined by the direction angles α, β and γ.

   (b) Describe Windowing and Clipping.

4. (a) Set up a parallel version of Bresenharm's Line Algorithm for slopes in the range of $0 < m < 1$.

   (b) Write short note on Application cf Computer Graphics

5. (a) Discuss the difference among multimedia, interactive multimedia, hyper text and hyper media.

   (b) Describe various image file formats.

6. (a) Describe what MIDI is, what its benefits are, and how it is best used in a multimedia project.

   (b) Differentiate between Kinematics and Morphing.

7. Discuss several considerations in shooting and editing video for multimedia. What techniques; would you use to produce the best possible video, at a reasonable cost ? Which of these techniques apply to all video, and which apply specifically to multimedia?

8. Write short notes on any two of the following :

   (a) Digital Cameras.   (b) Analog Broadcast Video Standards.

   (c) Antialiasing.   (d) JPEG and MPEG.

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