(b) Describe the term color models. Differentiate between following models :

(i) RGB and YIQ

(ii) XYZ and RGB 8,8

7. Explain the following with example :

(a) Depth Buffer Method

(b) Diffuse Reflection Illumination Method 8×2=16

Unit-IV

8. (a) What are various components of multimedia ? Enumerate the steps involved in authoring process.

(b) Explain compression in multimedia. Differentiate between compression and decompression of multimedia in detail. 8,8

9. Explain the following terms with the help of diagrams :

(a) Hypermedia message component

(b) Multimedia I/O technologies 8×2=16

Roll No. : .....

Total No. of Questions : **9**] [Total No. of Pages : **4**

67006-N

M.C.A. 1st Semester (Regular)
Examination, March-2022
(MCA 2 Year Programme)
(w.e.f. 2020-21)
Paper-20MCA21C3

COMPUTER GRAPHICS AND MULTIMEDIA

Time : Three Hours] *[Maximum Marks : 80*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note :- Attempt *five* questions in all, selecting *one* question from each Unit. Q. No. **1** is compulsory. All questions carry equal marks.

1. Compulsory Question :

(a) What are various graphics software and their standards ?

(b) Define aspect ratio with suitable example.

(c) Explain matrix representation in 2-D transformation.

(d) Describe window to viewport coordinate transformation.

(e) What is meant by scaling in three dimensional transformations ?

(f) What do you understand by visible surface detection concept ?

(g) Describe the term distributed multimedia system.

(h) Explain the concept of multimedia data interface standard. 2×8=16

Unit-I

2. (a) What do you understand by term computer graphics ? Explain its various applications with suitable examples.

(b) What is Bresenham's line drawing algorithm ? Digitize the line with end points (0, 0) and (6, 8) using Bresenham's line drawing algorithm. 8,8

3. (a) What are raster scan systems ? What are their characteristics ? Distinguish between raster scan system and random scan system.

(b) Explain Scan-Line Polygon Fill algorithm with the help of example. 8,8

Unit-II

4. (a) What is meant by geometric transformation ? A triangle is defined by :

$$\begin{bmatrix} 2 & 4 & 4 \\ 2 & 2 & 4 \end{bmatrix}$$

Find the transformed coordinates after the following transformation :

(i) 90° rotation about origin

(ii) Reflection about line $y = -x$

(b) Describe Point and Line clipping in detail. Explain Cohen-Sutherland line clipping algorithm. 8,8

5. Explain the following in detail :

(a) 2D Shearing Transformation

(b) Bazier Curves 8×2=16

Unit-III

6. (a) What do you understand by 3-D transformation ? Explain parallel and perspective transformations in detail.