Roll No. : .....

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

67006–N

M.C.A. (2 Year Programme) 1st Semester
(Regular) Examination, March-2021

(w.e.f. 2020-21)

COMPUTER GRAPHICS & MULTIMEDIA

Paper-20MCA21C3

*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. Question No. **1** is compulsory. All questions carry equal marks.

(Compulsory Question)

1. (a) What is aspect ratio ? Why is it needed ?

   (b) Give a brief description of PHIGS standard used for computer graphics.

   (c) What is meant by coordinate systems transformation ?

   (d) Differentiate between parallel and perspective projection.

   (e) What do you understand by three-dimensional graphics packages ?

   (f) What is meant by scaling in 3D transformation ?

   (g) Explain the concept of multimedia data interface standard.

   (h) What is hypermedia message component ? Explain it with suitable diagram. 2×8=16

Unit–I

2. (a) What are video display devices ? Explain shadow mask CRT with the help of diagram.

   (b) Explain midpoint circle algorithm. Calculate all the required point for creating a circle using midpoint circle algorithm having center at (3, 4) with radius of 10 cm. 8,8

3. (a) Describe various attributes of output primitives. Explain Area-fill attribute in detail.

(b) Explain boundary fill algorithm with the help of example. 8,8

Unit–II

4. (a) What are viewing pipeline and coordinates system ? Explain window to viewport transformation with example.

(b) Describe Point and Line clipping in detail. Explain Liang-Barsky line clipping algorithm with the help of example. 8,8

5. Explain the following terms :

(a) B-Spline curves

(b) Composite transformation 8×2=16

Unit–III

6. (a) What do you mean by 3-D transformation ? Explain 3-D rotation and 3-D scaling with the help of example.

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

(i) RGB and YIQ

(ii) XYZ and RGB 8,8

7. Explain the following with the help of suitable diagrams :

(a) Back-Face Detection

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

Unit–IV

8. (a) What do you mean by Multimedia ? Explain multimedia system architecture in detail.

(b) Explain the concept of integrated multimedia message standards. How integrated document management works in multimedia environment ? 8,8

9. Explain the following terms and also discuss various applications :

(a) Distributed Multimedia System

(b) Mobile Messaging 8×2=16