

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
(i.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.

67006-N_7(0)

(1)

RD-709 P.T.O.

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

67006-N_7(0)

(3)

RD-709 P.T.O.

- (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

67006-N_7(0)

(2)

RD-709

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

67006-N_7(0)

(4)

RD-709