Total No. of Questions : **11** ]         [ Total No. of Printed Pages : **3**

# BFMS–445

## M.Sc. (Final) Examination, 2023
## COMPUTER SCIENCE

Paper – MCS–204 (A)

### (Computer Graphics and Multimedia)

*Time : 3 Hours* ]         [ *Maximum Marks : 50*

**Section–A**        **(Marks : 2 × 10 = 20)**

*Note* :–    Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

**Section–B**        **(Marks : 3 × 5 = 15)**

*Note* :–    Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **3** marks.

**Section–C**        **(Marks : 5 × 3 = 15)**

*Note* :–    Answer any *three* questions out of five (Answer limit **500** words). Each question carries **5** marks.

**Section–A**

1.   (i)    What is Computer Graphics ?

    (ii)    Define CRT Monitor.

    (iii)    Define Raster and Random Scan Display.

    (iv)    Define 2D Transformation.

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(v) What is Composite Transformation ?

(vi) What is Scaling ?

(vii) Define the Animations.

(viii) Define Subdividing Meshes.

(ix) How can we Creating Bump Maps ?

(x) Write about Building and animating a simple character.

## Section–B

2. Consider a line from (0, 0) to (4, 6) use the simple DDA algorithm to rasterize this line.

*Or*

Explain graphics display devices.

3. Explain Translation, Rotation and Scaling in 2D Transformation.

*Or*

Give the 3D Transformation Matrix for translation, rotation and scaling.

4. What is Projection ? Explain the different types of projection.

*Or*

Write short notes on the following :

(a) Transparency

(b) Principles of Animations

5. Write step for using snap to move objects precisely.

*Or*

How do rotation and translation perform in Blender ?

6. Write short notes on the following :

(a) Understanding ambient occlusion

(b) Adding motion blur and depth on field

*Or*

Write step for assigning glossy and reflective materials to objects in Blender.

**Section–C**

7.  Explain the RGB, CMY and HSV color models in detail.

8.  Explain the matrix representation of 3D transformation for translation, rotation and scaling.

9.  Explain the following in detail :

    (a)    Clipping

    (b)    Hidden Surface Removal

10. Explain the joining mesh objects and stiching vertices in detail.

11. Explain the following in detail :

    (a)    Organizing a scene with layers

    (b)    Editing animation in the Graph Editor