



PAPER ID-410827

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Subject Code: KCA052

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MCA
(SEM IV) THEORY EXAMINATION 2023-24
COMPUTER GRAPHICS AND ANIMATION

TIME: 3 HRS**M.MARKS: 100**

Note: 1. Attempt all Sections. If require any missing data; then choose suitably.

SECTION A

1. Attempt all questions in brief.

a.	What is computer Graphics?	2
b.	Write any two applications of computer graphics.	2
c.	What do you mean by reflection?	2
d.	What is viewing?	2
e.	Define vanishing point in terms of projection.	2
f.	Define Blobby objects.	2
g.	What is diffuse reflection?	2
h.	What do you mean by Intensity Attenuation?	2
i.	What is image?	2
j.	Define linear multimedia.	2

SECTION B

2. Attempt any three of the following:

a.	How image is to be display on Video Display Device? Discuss.	10
b.	Perform mapping from Window to Viewport Coordinate transformation.	10
c.	Explain Projection with the help of Orthographic projection.	10
d.	Compare all visible surface detection methods.	10
e.	Explain Animation with Character Animation.	10

SECTION C

3. Attempt any one part of the following:

a.	Explain the method of circle drawing using Midpoint Circle Algorithm.	10
b.	Distinguish between Active and Passive graphics device.	10

4. Attempt any one part of the following:

a.	Using homogeneous coordinate transformation matrix, apply following sequence of transformation to a unit square centered at origin – Translation by factor (1, 1) Rotation by angle $\Theta = 90^\circ$	10
b.	Obtain the general combined matrix for scaling about an Fixed Point P(xf, yf).	10

5. Attempt any one part of the following:

a.	Write a note on B-Spline Curves.	10
b.	Construct Bezier curve of order 3, with 4 polygon vertices A(1,1), B(2,3), C(4,3), D(6,4) for values of u, $0 \leq u \leq 1$ where p(u) is a point on curve with values for $u=(0, 1/4, 1/2, 3/4, 1)$.	10

6. Attempt any one part of the following:

a.	Explain Z-buffer algorithm with advantages and disadvantages.	10
b.	Write a note on transparency and Shadows.	10

7. Attempt any one part of the following:

a.	Explain different file formats of an image.	10
b.	Distinguish key frame animation with procedural animation.	10