B.E. (Computer Technology) Sixth Semester (C.B.S.)
Computer Graphics

P. Pages : 2

Time : Three Hours

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0358

Max. Marks : 80

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Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.

1. a) What are the computer Graphics Application and Software. **6**

   b) Explain random scan and raster scan in detail. **7**

   OR

2. a) What is the basic architecture of Raster Refresh Graphics display? **6**

   b) Explain hardcopy technology. **7**

3. a) What is aliasing in computer graphics? Explain in detail about various anti-aliasing technique. **6**

   b) Explain the working of following Polygon filling algorithm. **7**
   i) Edge flag algorithm.   ii) Scan line seed fill algorithm.

   OR

4. a) Fill the polygon defined by the vertices A(3 , 2) B (8 , 2), C(8 , 5) D(6 , 8) and E (3 , 5) Using fence fill algorithm. Choose a fence at any vertex on vertical portion of polygon. **8**

   b) Explain Halftoning technique in detail. **5**

5. a) Explain Cyrus Beck algorithm in detail. **6**

   b) Clip a line P_1 (70, 20) and P_2(100, 40) using cohen Sutherland algorithm against a window lower left corner (50 , 10) and upper right corner (80 , 40). **8**

   OR

6. a) Write a procedure for drawing the Bezier curve. **5**

   b) Explain following. **6**
   i) Polygon Mesh.   ii) Parametric Bicubic Surface.

	c)	State the properties of B-spline curve.	3
7.	a)	Write a short note on Normalized Device Co-ordinates (NDC)	6
	b)	Explain the steps for reflection about an arbitrary line. Also derive the transformation matrix.	7

OR

8.	a)	Why do we need a viewing transformation? How is it implemented?	6
	b)	Explain 2D transformation (Rotation) in detail. Explain homogeneous coordinate system.	7
9.	a)	Explain the perspective projection techniques.	5
	b)	Give the final projected Matrix for Parallel Projection.	5
	c)	Write a short note on isometric projection.	3

OR

10.	a)	State and explain 3D transformation matrices for scaling, rotation & translation around standard axis.	4
	b)	Explain Painter's Algorithm in detail.	4
	c)	Explain α – buffer algorithm.	5
11.	a)	Write a feature of OPENGL.	5
	b)	Explain abstraction in Open GL.	5
	c)	List the various graphics libraries available in Open GL.	4

OR

12.	a)	Explain the operation in Open GL.	7
	b)	Explain 3D viewing Pipeline.	7

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