7. (a) Explain in detail about plain equation method. Explain which algorithm is better for hidden surface removal.

(b) Explain the scan line method of visible surface detection in computer graphics. 8,7

Section–IV

8. (a) Explain the procedure to generate Bezier curve.

(b) Differentiate between diffuse reflection and specular reflection. Why do we require shading model ? Explain it. 6,9

9. (a) Explain the components of a general-purpose digital image processing system with a neat diagram.

(b) Compare and contrast between flat and smooth shading models with necesssary examples. 8,7

Roll No. : .....

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

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B.Tech. (CSE) 6th Semester (Supplementary) Examination, July–2021

(G Scheme) (Elective-II)

COMPUTER GRAPHICS

Paper–PEC–CSE–314–G

*Time : **Three** Hours]* *[Maximum Marks : **75***

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 Section. Q. No. **1** is compulsory. All questions carry equal marks.

1. (a) What is a View Port ?

(b) Write about the primary and secondary colours.

(c) Explain text clipping.

(d) Define flat shading.

(e) Explain about polygon tables. 3×5=15

Section–I

2. Write DDA line generation algorithm and Bresenham's line generation algorithm. Apply these algorithms to produce line segment from point (0, 0) to point (6, 6). Compare their respectively. 15

3. (a) Explain scan line polygon fill method, with suitable diagram to support your explanation. Compare the scan line polygon fill method with flood fill method.

(b) Differentiate between any *two* of the following :

(i) Computer Graphics and Animation

(ii) Random Scan and Raster Scan display devices

(iii) Printer and Plotter 8,7

Section–II

4. (a) Find a transformation of triangle A(1, 0), B(0, 1), C(1, 1) by :

(i) Rotating 450 about the origin and then translating one unit in x and y direction.

(ii) Translating one unit in x and y direction and then rotating 450 about the origin. 8

(b) Define window and view port. Describe two-dimension windows to view port transformation with matrix representation for each step. 7

5. (a) Consider the line from (5, 5) to (13, 9). Use the Bresenham's algorithm to rasterize this line.

(b) Where do you require ellipse clipping algorithm ? Explain in detail about ellipse clipping algorithm. 8,7

Section–III

6. (a) Explain parallel projection with its types.

(b) Explain in detail about depth Buffer Method. Justify that is better than plane equation method. 7,8