Total No. of Printed Pages:3

SUBJECT CODE NO: E-71

FACULTY OF ENGINEERING AND TECHNOLOGY

S.E.(CSE/IT) Examination Nov/Dec 2017

Computer Graphics

(OLD)

[Time: 3 Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 is compulsory.
ii) Solve any two questions from Q.No.2, 3 , 4, &5.

Section- A

Q.1 Solve all of the following questions.

a) With suitable diagram explain the construction and working of CRT. 05

b) Write the steps of Bresanham's line drawing algorithm 05

Q.2 Solve all of the following questions.

a) Write a short note on: Flood fill algorithm. 05

b) With suitable diagram explain the architecture or Raster Scan display. 05

c) Write a program in open GL to display a rectangle. 05

Q.3 Solve all of the following questions.

a) Write a short note on: Tablets and Light Pen. 05

b) Explain the open GL library organization in detail. 05

c) Write a short note on: Bean Penetration Technique. 05

Q.4 Solve all of the following questions.

a) Write a short note on: Indexed color model. 05

b) What is pipeline processor architecture? How does it increase processing speed? 05

c) What is mean by display file? What are the functions of segmenting display files? 05

Q.5 Solve all of the following questions.

a) List and explain the different open GL primitives with example and suitable diagram for each. 08

b) Explain glut Init Display Mode () function of Open GL in detail. 07

Q.6 **Section-B**

N.B: i) Q. No. 6 is compulsory.
ii) Solve any two questions from Q. No. 7, 8, 9 and 10.

Solve all of the following questions.

a) Explain the following two dimensional transformations: 05
i) Shear &
ii) Reflection

b) Explain the Mid-point Subdivision Line Clipping Algorithm in detail. 05

Q.7 Solve all of the following questions.

a) Explain in detail: Parallel Projection and Perspective Projection. 05

b) Consider the line from (0, 0) to (4, 6). Use DDA algorithm to rasterize this line. 05

c) Write a short note on: Z-Buffer algorithm. 05

Q.8 Solve all of the following questions.

a) Write a short note on: Text Clipping. 05

b) Prove that two scaling transformations commute, i.e. S1* S2 =S2*S1. 05

c) Explain the Sutherland-Hodgeman polygon clipping algorithm. 05

Q.9 Solve all of the following questions. 08

a) Explain: Normalization Transformation and Workstation Transformation.

b) What are the different methods available in shading a polygon? Discuss any one of them. 07

Q.10 Solve all of the following questions.

a) List the different approaches used for hidden surface removal algorithm and explain any one in detail. 08

b) Find the transformation matrix that transforms the given square ABCT to half its size with centre still remaining at the same position. The coordinates of the square are: A(1,1), B(3,1), C(3,3), D(1,3) and the centre at (2,2). Also find the resultant coordinates of the square. 07