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S.E. (Computer) (II Sem.) EXAMINATION, 2018

COMPUTER GRAPHICS AND GAMING

(2012 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Neat diagrams must be drawn wherever necessary.

(ii) Assume suitable data, if necessary.

(iii) Attempt Q. No. 1 or Q. No. 2, Q. No. 3 or Q. No. 4,
Q. No. 5 or Q. No. 6 and Q. No. 7 or Q. No. 8.

- Q. 1 A) Enlist applications of Computer graphics and define pixel, frame buffer 6
B) Find out which pixel would be turned on for the line with end points (0, 0) to (3, 3) using Bresenham's line algorithm. 3
C) Write a note on GTK+ architecture. 3

OR

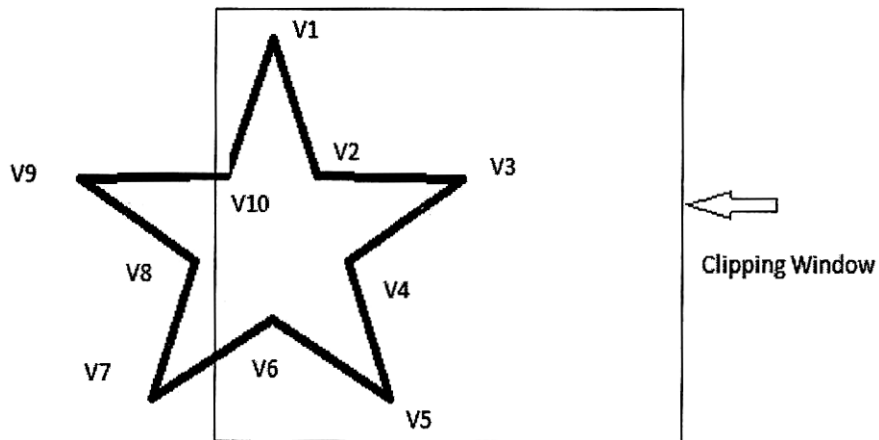
- Q. 2 A) Define following terms 3
i) Persistence
ii) Aspect Ratio
iii) Resolution
B) Write a note on Line styles. 3
C) Write a short note on Character Generation Methods. 6

P.T.O.

- Q. 3 A) Write 2D transformation matrices of translation, scaling and shearing. Give the derivation of 2D rotation matrix. 6
 B) Explain Scan-Line Polygon filling algorithm in detail. 6

OR

- Q. 4 A) Explain Sutherland-Hodgeman Polygon clipping algorithm. 6



Show stepwise clipping of polygon ABC in the order Left, Top, Right and Bottom using above algorithm along with input and output set of vertices at each stage

- B) Explain rotation about an arbitrary axis in 3-D. 6

- Q. 5 A) Enlist hidden face removal algorithm & Explain any one of them with diagram 7

- B) Explain Bezier curve? List its properties 6

OR

- Q. 6 A) What is Fractals? Explain Hilbert Curve and Koch curve. 7

- B) Explain and Compare shading algorithms 6

- Q. 7 A) a) Draw block diagram of NVIDIA workstation 5
B) b) Write a short note on 8
i) OpenGL ES
ii) 3DMaxStudio / Maya / any equivalent open source (like blender)

OR

- Q. 8 A) Describe various operations carried out on the segment 6
B) Define animation. Explain the methods for controlling animations? 7