Total No. of Questions—8] [Total No. of Printed Pages—3

Seat No.	

[5352]-169

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

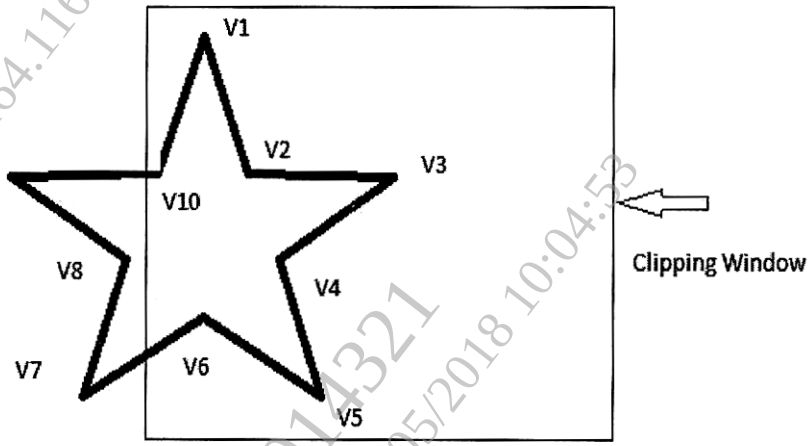
P.T.O.

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