Third Semester MCA Degree Examination, Dec.2019/Jan.2020 Computer Graphics

	Tin	ne:-3	hrs. Max.	Marks:100
Note: Answer any FIVE full questions.				
	The same of the same of			
ice	1	a.	What is OpenGL? Describe OpenGL related libraries and header files.	(05 Marks)
raci		b.	Explain OpenGL point and line functions with examples.	(07 Marks)
lah		c.	Differentiate absolute and relative coordinate specification.	(02 Marks)
π St		d.	Explain OpenGL functions to set display callback routine and to display initi	al graphics, to
ed (the display window.	(06 Marks)
rea				
<u>8</u>	2	a.	Explain briefly the procedure for DDA line drawing algorithm.	(06 Marks)
Į.	_	b.	Explain Midpoint circle algorithm deriving the decision parameter and given	radius $r = 10$.
٥, ٧		٠.		(09 Marks)
ا ا بح		c.	Explain boundary-fill algorithm in brief.	(05 Marks)
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νυ <u>4.</u>	3	a.	Explain 2D translation, rotation, reflection and scaling.	(10 Marks)
S U		b.	What is composite transformation? Show that composition of 2 scaling is mult	iplicative.
i te				(05 Marks)
8		c.	Explain Pivot-point Rotation with example.	(05 Marks)
ion				
ag de	4	a.	Explain OpenGL geometric transformation functions and Matrix operations in	brief.
. i				(07 Marks)
y pu		b.	Explain 3D Rotation about all axis.	(05 Marks)
Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice		c.	Write a program to create [without using built in function] a square by imple	
natc			algorithm along i) x-axis ii) y-axis.	(08 Marks)
y al	_			(10 34
ţ,	5	a.	Explain Liang-Barsky line clipping algorithm.	(10 Marks)
ਫ਼ਿ		b.	What is polygon clipping? Explain the algorithm for convex polygon fill area	cupping with
da			example.	(10 Marks)
ion,				/0.00 N.M I \
Cat	6	a.	Explain 3D viewing pipeline.	(05 Marks)
ntif		b.	Explain depth curing, surface Rendering in 3-dimensional viewing.	(05 Marks)
ide		C	Derive the 3-dimensional transformation matrices from world to viewing coor	amate. (10 Marks)
ng of		W.) ~	(10 Harks)
rling.	-		Daving Obligue and Hall are jection watery	(10 Marks)
2 2	7	a.	Derive Oblique parallel projection matrix.	(10 Marks)
, S.		b.	Derive perspective projection transformation matrix.	(10 Marks)
			What is Danish suling survey Danish its aquation and avalain its properties	(10 Marks)
. ~i	8	a. L	What is Bezier spline curve? Derive its equation and explain its properties.	(10 mains)
3		b.	Explain the following:	
1			i) Design an animation sequence	(10 Marks)
3			ii) Traditional animation techniques.	(10 mmins)

8 DEC 2019

Important Note: 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.