K. J. Somaiya Institute of Technology, Sion, Mumbai-22 (Autonomous College Affiliated to University of Mumbai)

Nov – Dec 2023

(B. Tech) Program: AI &DS Scheme I/II/IIB/III:II

Examination: SY Semester: III

Course Code: AIC305 and Course Name: Computer Graphics

Date of Exam: 09/12/23

Duration: 2.5 Hours

Max. Marks: 60

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(1) All questions are compulsory.

(2) Draw neat diagrams wherever applicable.

(3) Assume suitable data, if necessary.

dem A D	en Vis Random sonn Receithm to rasterize a line serment from (3.0) to	Max. Marks	СО	BT level
Q1	Solve any six questions out of eight:	12	1.701.	
i)	What is a raster scan?	2	otale a	Rem
ii)	Write advantages of the DDA algorithm	2	2	Rem
iii).	Write a homogeneous matrix for 2D rotation in the anticlockwise direction	2	3	Rem
iv)	Write in brief about line clipping algorithms you have studied	2	4.1	Rem
v)	Explain in brief what are fractals	ma 2 adv	5	U
vi)	Describe in brief different types of Animation.	2 zalgionne	6	U
vii)	xplain in brief the need for the use of a homogeneous matrix in the CG ansformations		3	U
viii)	List polygon clipping algorithms. Explain each in one or two lines	2	4	U
Q.2	Solve any four questions out of six	16		
i)	Draw a block diagram of a Raster scan system and explain in brief.	4	1	U
ii)	Explain in brief the eight-way symmetry of a circle and how it is utilised in CG		2	Ú
iii)	Summarize properties of Homogeneous Coordinate representation	4	*3	. U
iv)	Write a short note on polygon clipping		4	U
v)	Discuss in brief the types of projections	4	5	U

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vi)	Explain visible surface detection		6	U
Q.3	Solve any two questions out of three.	16	neal and su	rosti (S) raeja (E)
i) 18	Compare Raster scan V/s Random scan	8	1,	Rem
ii)	Use Bresenham's algorithm to rasterize a line segment from (3,6) to (8,10).	8	· 2	Ap
iii),	Rotate a triangle defined by A (0,0), B (10,2), and C ₁ (7,4) by 90 ⁰ about the origin in the anticlockwise direction	8	3	Ар
Q.4	Solve any two questions out of three.	16	Veile a	(1)
i)	Write algorithm steps for Liang Barsky clipping Algorithm		4.4.	U
ii)	Explain what is meant by the B spline curve? State various properties of the B Spline curve.		5	U
iii)	Discuss principles of animation	8	6	U

Explain in breaf the need for the use or a homogeneous matrix in the CO strain inputations

(ii) (List polygon dippeng algorithms, traitent each in one or two titles

Solve the floor anertions out of six

(i) Solve the floor anertions out of six

(ii) (i) now rished alogram of a Racter scan vistem and explain in bite!

(ii) (iii) Support the edgin way some the of edge and low it is indicated in the constant of the properties of Homogeneous Condinate representation

(iii) Support total on polygon elipting

(iv) Write a short total on polygon elipting

(iv) Discuss in brief the types of inniections

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