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KAMALA INSTITUTE OF TECHNOLOGY & SCIENCE, SINGAPUR

23CS28PE521

III.B. Tech. I. Semester Regular Examinations, November 2025

COMPUTER GRAPHICS

(CSE)

Time: 3 Hours

Max.Marks:60

Note: Question paper consists of Part-A & Part-B.

i) **Part-A** for 10M, ii) **Part-B** for 50marks

- Part A** is compulsory, consists of 10 sub questions from all units carrying equal marks.
- Part-B** consists of **10 questions** (numbered from 2 to 11) carrying **10marks** each. From each unit there are 2 questions and the students should answer one of them. Hence the student should answer **5 questions** from **Part-B**.

PART-A(10Marks)			
Q.No	Questions	Marks	BTL
1.a)	What is the difference between Vector and Raster graphics?	1M	1
1.b)	What is the purpose of line drawing algorithms?	1M	1
1.c)	What is the purpose of homogeneous coordinates in 2D transformations?	1M	1
1.d)	What is the purpose of the viewing pipeline in computer graphics?	1M	1
1.e)	What is a polygon surface?	1M	1
1.f)	What is a Bezier curve?	1M	1
1.g)	What is the matrix representation for a 3D translation by (tx, ty, tz)?	1M	1
1.h)	Define viewing coordinates.	1M	1
1.i)	What are general computer animation functions?	1M	1
1.j)	What is the purpose of visible surface detection in computer graphics?	1M	1
PART-B(50Marks)			
Q.No	Questions	Marks	BTL

2. a)	Compare and contrast raster-scan and random-scan systems.	5M	2
b)	Explain the different types of input devices used in computer graphics.	5M	2
OR			
3. a)	Explain Bresenham's line drawing algorithm.	5M	2
b)	Discuss the boundary-fill and flood-fill algorithms for polygon filling.	5M	4
OR			
4. a)	Discuss the different types of 2D geometric transformations with example.	5M	4
b)	Discuss the concept of composite transformations and how they are used to perform complex transformations in 2D graphics.	5M	4
OR			
5. a)	Explain different types of clipping operations in computer graphics.	5M	2
b)	Explain the Cohen-Sutherland line clipping algorithm with example.	5M	2
OR			
6. a)	Explain properties of polygon surfaces.	5M	2
b)	Explain the spline representation of curves and surfaces.	5M	2
OR			
7. a)	Compare and contrast Bezier and B-Spline curves.	5M	2
b)	Explain polygon rendering methods.	5M	2
OR			
8. a)	Explain the concept of composite transformations in 3D graphics.	5M	2
b)	Discuss the differences between scaling and shear transformations in 3D graphics.	5M	2
OR			
9. a)	Compare and contrast perspective and parallel projections.	5M	2
b)	Explain the importance of clipping in computer graphics.	5M	2
OR			
10.a)	Explain the general computer animation functions and their role in creating animations.	5M	2

b)	Explain the different methods of motion specification in computer animation.	5M	2
OR			
11.a)	Explain the back-face detection method.	5M	2
b)	Compare and contrast the area sub-division method and the octree method for visible surface detection.	5M	2

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