Register No : _____

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV/DEC 2025

First Semester

Product Design and Development

PPDT2411 – Computer Applications in Design

Regulations – 2024

Duration: 3 Hrs *Maximum: 100 Marks*

*PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)*

Q. No	*Questions*	*BTL*	*CO*	*Marks*
1.	Define persistence.	L1	1	2
2.	Compare DDA algorithm with Brenham's algorithm.	L2	1	2
3.	What is meant by surface manipulation?	L1	2	2
4.	State any two differences between Bezier and B-spline curves.	L2	2	2
5.	List the different types of sweep representations.	L1	3	2
6.	Name any two regularized Boolean operations used in solid modeling.	L1	3	2
7.	Why is animation important in engineering simulations?	L2	4	2
8.	Name any two hidden surface removal algorithms.	L1	4	2
9.	Classify the types of geometric tolerances.	L2	5	2
10.	Interpret the three layers used in STEP architecture.	L2	5	2

*PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)*

Q.No			*Questions*	*BLT*	*CO*	*Marks*
11.	a		Explain the Digital Differential Analyzer line drawing algorithms. Using DDA Algorithm sketch the pixels for the line drawn from (5,5) to (15,5).	L2	1	16
			Or			
	b		Describe the steps in 2D geometric transformations with an example.	L2	1	16
12.	a		Explain Bezier and B-Splines surfaces with their parametric representation.	L2	2	16
			Or			
	b	i	Describe Hermite Cubic Spline Curve with proper illustration.	L2	2	8
		ii	Write short notes on curve manipulation with application.	L2	2	8
13.	a		Define primitive instancing. How is it different from primitive replication? Illustrate with examples used in CAD modeling.	L3	3	16
			Or			
	b		Describe Constructive Solid Geometry (CSG). Explain its advantages and limitations. Analyze with an example of its primitive combinations.	L3	3	16

14.	a	Discuss the various steps involved in hidden line removal algorithms with neat sketches.	L2	4	16
		Or			
	b	Discuss the effects of shading enhancements in the visualization.	L2	4	16
15.	a	Explain different types of form tolerances.	L2	5	16
		Or			
	b	Explain briefly about IGES and PDES Methodology.	L2	5	16