Register No : ___________________

THE KAVERY ENGINEERING COLLEGE

(An Autonomous Institution)

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

Third Semester

Product Design and Development

PPDE2410 - Quality and Financial Concepts in Product Development

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 the term "Quality".	L1	1	2
2.	List the seven statistical quality tools of quality.	L1	1	2
3.	State the requirement for benchmarking.	L1	2	2
4.	Is reliability important? Justify your answer.	L2	2	2
5.	Comment on PDSA cycle.	L2	3	2
6.	What are the Japanese 5S principles?	L1	3	2
7.	Distinguish between robust design and embodiment design.	L2	4	2
8.	State the significance of FMEA.	L2	4	2
9.	Define venture capital.	L1	5	2
10.	Identify an instance where short term loan is beneficial.	L2	5	2

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

Q.No		*Questions*	*BLT*	*CO*	*Marks*
11.	a	The data shows the sample mean and range for 10 samples for size 5 each. Determine the control limits for mean chart and range chart.	L5	1	16

Sample	1	2	3	4	5	6	7	8	9	10
Mean	21	26	23	18	19	15	14	20	16	10
Range	5	6	9	7	4	6	8	9	4	7

Or

	b	Interpret and Construct a p-chart for the following data:	L5	1	16

No of Samples (each of 100 items)	1	2	3	4	5	6	7	8	9	10
No of defectives	12	10	6	8	9	9	7	10	11	8

12.	a	List the steps involved in Quality Function Deployment and explain each step-in detail.	L2	2	16
		Or			
	b	Explain the structure of house of quality in detail.	L2	2	16

13.	a	Elaborate on the eight pillars of TPM.	L3	3	16
		Or			
	b	What is six sigma? Identify the need for six sigma. Elaborate on the five phases in six sigma process.	L3	3	16
14.	a	List the tools used in Robust Design. Explain any two of them with appropriate examples.	L4	4	16
		Or			
	b	Discover the different phases of embodiment design with necessary sketches.	L4	4	16
15.	a	Examine the factors that affect working capital? Also explain the different sources of working capital.	L4	5	16
		Or			
	b	Compare and contrast over capitalization and under capitalization. Discuss the remedies for both over and under capitalization.	L4	5	16