

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)
M.E DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2025
Second Semester

Product Design and Development

MF4071/PPDT2424-Design for Manufacture and Assembly

Regulations – 2021/2024

Duration : 3 Hrs

Maximum : 100 Marks

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

Q.No	Questions	BLT	CO	Marks
1.	Define tolerance in engineering design.	L1	1	2
2.	Mention two examples of unequal bilateral tolerance.	L2	1	2
3.	What is meant by tolerance synthesis in product design?	L1	2	2
4.	State any two limitations of traditional cost-based analysis in tolerance allocation.	L2	2	2
5.	Define Geometric Dimensioning and Tolerancing (GD&T).	L1	3	2
6.	What is the GD&T symbol for Perpendicularity?	L1	3	2
7.	What is meant by tolerance charting?	L1	4	2
8.	Name two applications of automatic tolerance charting	L2	4	2
9.	Write a short note on Vis/VSA.	L1	5	2
10.	Mention one DFM guideline for casting.	L2	5	2

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

Q.No	Questions	BLT	CO	Marks
11.	a Describe any two types of tolerance analysis techniques with suitable examples.	L2	1	16
	Or			
	b Explain Taguchi's approach to tolerance design in detail with suitable examples.	L2	1	16
12.	a Explain the concept of Computer Aided Tolerancing (CAT) in detail.	L2	2	16
	Or			
	b Summarize the principle and process involved in selective assembly with examples	L2	2	16
13.	a Discuss the fundamental rules and concepts of Geometric Dimensioning and Tolerancing (GD&T).	L2	3	16
	Or			
	b Describe the concept of concentricity and symmetry controls to a machined part and explain how it would be verified using standard testing procedures.	L2	3	16

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| 14. | a | Develop a tolerance chart for your own example. | L3 | 4 | 16 |
| | | Or | | | |
| | b | Apply the arithmetic ground rules used in tolerance charting for angular surface analysis and discuss in detail. | L3 | 4 | 16 |
| 15. | a | Discuss the general design guidelines for any one type of formed metal component. | L2 | 5 | 16 |
| | | Or | | | |
| | b | Explain Boothroyd and Dewhurst method of DFMA and its application in real-time manufacturing scenarios. | L2 | 5 | 16 |