

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

M.E DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

First Semester

Product Design and Development

PPDT2412 – Reverse Engineering

Regulations - 2024

Duration : 3 Hrs

Maximum : 100 Marks

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

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	List the various prototyping techniques used in reverse engineering.	RE	1	2
2.	How does the concept of symmetry apply to geometric forms in engineering?	RE	1	2
3.	Write short note on alloy structure equivalency.	UN	2	2
4.	Define hardness.	RE	2	2
5.	What are the common methods for determining material composition?	RE	3	2
6.	Classify the techniques used for microstructure analysis.	UN	3	2
7.	Outline the data acceptance criteria.	UN	4	2
8.	Mention the importance of theory of interference.	UN	4	2
9.	What are the common applications of reverse engineering used in medical device development?	RE	5	2
10.	Discuss the reverse engineering in automotive industry.	UN	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a i Explain the key steps involved in the generic process of reverse engineering.	UN	1	7
	ii Describe the role of CARE in improving the accuracy and efficiency of reverse engineering processes.	UN	1	6
	Or			
	b i Describe the different methods used for dimensional measurement in reverse engineering.	UN	1	7
	ii Summarize surface and solid model reconstruction in the context of reverse engineering.	UN	1	6
12.	a Extend the relationship between hardness and other mechanical properties of materials.	UN	2	13
	Or			
	b Illustrate the steps involved in conducting a part failure analysis.	UN	2	13
13.	a Build the process of creating a material specification for a new product with suitable examples.	AP	3	13
	Or			
	b Construct a continuous improvement plan to enhance process verification practices in a factory.	AP	3	13

14.	a	Analyze the challenges faced in ensuring the accuracy of data analysis.	AN	4	13
		Or			
	b	Compare and contrast Weibull analysis with other reliability analysis methods.	AN	4	13
15.	a	Develop the process of identifying and classifying trade secrets in a business.	AP	5	13
		Or			
	b	Identify the process of using reverse engineering to develop a more effective medical device.	AP	5	13

*PART – C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	How do you apply statistical analysis to interpret a dataset in a research study?	AP	3	15
		Or			
	b	How do you implement a performance evaluation methodology in your organization? Explain with suitable examples.	AP	3	15