Reg. No.												

Question Paper Code	11938

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL/MAY 2023

Fifth Semester

Mechanical Engineering

20MEEL509 - PRODUCT DESIGN AND DEVELOPMENT

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	List the basic steps in supplier assessments.	2, K1,CO1
2.	List the need for IPPD.	2, K1,CO1
3.	What do you mean by problem decomposition?	2, K1,CO2
4.	What are all the purposes of prototyping?	2, K1,CO6
5.	List the types in modularity.	2, K1,CO3
6.	Define Manufacturability.	2, K1,CO3
7.	What is Industrial Design?	2, K1,CO4
8.	Explain the need for industrial design.	2, K2,CO4
9.	Define component cost.	2, K1,CO5
10.	What do you mean by assembly time reduction?	2, K1,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Explain briefly about the behavioral analysis.	13,K2,CO1
		OR	
	b)	Generalize the concurrent development.	13,K2,CO1
12.	a)	Explain briefly about problem clarification and decomposition with suitable example.	13,K2,CO2
		OR	
	b)	Explain concept combination tree and table.	13,K2,CO2
13.	a)	Express the way by which the product will be created and clustered in architecture.	13,K2,CO3
		OR	

b) Compare the slot modular architecture, bus modular architecture, section Modular architecture. *13,K2,CO3*

14. a) Demonstrate in detail the robust design with suitable example. *13,K2,CO4*

OR

b) Justify the need of ergonomics and aesthetics in ID with a suitable example. *13,K2,CO4*

15. a) Explain the elements involved in manufacturing cost. *13,K2,CO5*

OR

b) Discuss the factors involved in maximizing the ease of assembly. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Discuss the different ways you could communicate a concept for a new user interface for an automotive audio system. *15,K2,CO6*

OR

b) Discuss about the reasons why reducing the number of parts in a product might reduce production costs. Also list some reasons why costs might increase. Discuss. *15,K2,CO6*