Reg. No.												

Question Paper Code	11983

12 JUL 2023

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

Second Semester

CAD / CAM

20PCDPC203 – INTEGRATED PRODUCT DESIGN AND PROCESS DEVELOPMENT

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Name two key stakeholders involved in the integration of customer, designer, material supplier, and process planner.	*2,K1,CO1*
2.	What is the significance of involving customers in the development process?	*2,K1,CO1*
3.	What is the purpose of establishing product specifications?	*2,K1,CO2*
4.	Name two sources for conducting an external search during the clarification phase of product specification.	*2,K1,CO2*
5.	What is clustering?	*2,K1,CO3*
6.	Define portfolio architecture.	*2,K1,CO3*
7.	What is robust design?	*2,K1,CO4*
8.	How can the use of CAE tools improve the efficiency of product development?	*2,K2,CO4*
9.	What are the basics of prototyping in product development?	*2,K1,CO5*
10.	What are some techniques or strategies for accelerating a project?	*2,K1,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Discuss the need for Integrated Product and Process Development (IPPD) and its impact on product development.	*13,K2,CO1*
		OR	
	b)	Explain the role of organization process management and improvement in product development.	*13,K2,CO1*
12.	a)	Explore the systematic approach to establishing product specifications and highlight its key steps.	*13,K2,CO2*
		OR	

b) Discuss the importance of component standardization in product specification development and its impact on manufacturing processes. *13,K2,CO2*

13. a) Explain the importance of establishing architecture in product development and its impact on the overall project. *13,K2,CO3*

OR

b) Compare and contrast fundamental and incidental interactions in the context of product development, highlighting their implications. *13,K2,CO3*

14. a) Explain the significance of integrating CAE, CAD, and CAM tools in the design process. *13,K2,CO4*

OR

b) Compare and contrast technology-driven products and user-driven products in terms of their design and development approaches. *13,K2,CO4*

15. a) Using a case study, demonstrate how economic analysis can help in making informed decisions regarding cost reduction and manufacturing optimization. *13,K3,CO5*

OR

b) Using an example, demonstrate how baseline project planning can contribute to minimizing costs and ensuring efficient resource allocation in manufacturing projects. *13,K3,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Conduct a detailed analysis of competitor and customer behavior and explain how it can guide an organization's decision-making process. *15,K3,CO1*

OR

b) Discuss the key steps involved in managing and improving organizational processes for better product development outcomes. Illustrate your answer with suitable examples. *15,K3,CO1*