

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code:U2104

M.E. DEGREE EXAMINATION, APRIL 2024

Second Semester

21PCD204 – PRODUCT DESIGN AND LIFE CYCLE MANAGEMENT

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART - A (5 x 20 = 100 Marks)

1. (a) Explain the differences between collaborative product development and traditional linear product development models. CO1-U (20)

Or

(b) Explain the principles of concurrent engineering to improve communication among cross-functional teams during the product development process. CO1-U (20)

2. (a) Apply customer needs to develop product concepts that meet market demands while considering factors such as design for manufacturing, cost, and quality. CO2-App (20)

Or

(b) Identify the impact of ergonomic considerations on product design and user experience. CO2-App (20)

3. (a) Describe and implement the systematic exploration techniques for generating a diverse range of concepts. CO1-U (20)

Or

(b) Demonstrate the differences between external and internal approaches to idea generation, citing advantages and disadvantages of each. CO1-U (20)

4. (a) Develop a product architecture for a specific product, incorporating various types of modularity. CO4-App (20)

Or

(b) Identify the ways in which modular architecture helps with customization, sustainability, and cost reduction in product creation. CO4-App (20)

5. (a) Demonstrate the growing significance of design for sustainability (DFS) and explore approaches to minimizing a product's environmental impact. CO1-U (20)

Or

(b) How does Design for Optimization (DFO) help in optimizing the product design for better performance and efficiency? CO1-U (20)