



**PILLAI COLLEGE OF ENGINEERING, NEW PANVEL**  
**(Autonomous) (Accredited 'A+' by NAAC)**  
**END SEMESTER EXAMINATION**  
**May 2023**

SEM-VI

BRANCH: (MECH/AUTO/EXTC/ECS/IT)

**Subject:- Product Design (ILOC-1)****Time: 02.00 Hours****Max. Marks: 60****Date: 10/05/2023****N.B 1. Q.1 is compulsory****Subject Code IL363****2. Attempt any two from the remaining three questions****3. Each Question carry 20 marks.**

Q.1.	Attempt All	Marks												
a)	Write short note on : Quality Dimensions.	5												
b)	Discuss the importance of Ergonomics and Aesthetic.	5												
c)	Explain Value Engineering concept with suitable example.	5												
d)	What is quality function deployment (QFD)?	5												
Q.2.	Attempt All													
a)	Explain various Creativity and Idea generation techniques used in product design.	4												
b)	What is DFM? Discuss the guiding principles for implementing DFM.	4												
c)	Explain Product Life Cycle with neat sketch.	6												
d)	What is Rapid Prototyping? What are the different methods for rapid prototyping explain any one in detail?	6												
Q.3.	Attempt All													
a)	Differentiate concurrent engineering with sequential engineering approach.	4												
b)	Write short note on : Design for Robustness	4												
c)	Explain the various phases involve in new product development with suitable example.	6												
d)	<div>The expected cash flow of the project, which involves an investment outlay of Rs.1,000,000 are given below. The risk – adjusted discount rate for this project is 10%. Is project is worthwhile?</div> <table><tr><th>Year</th><th>Cash Flows(Rs.)</th></tr><tr><td>1</td><td>200,000</td></tr><tr><td>2</td><td>200,000</td></tr><tr><td>3</td><td>300,000</td></tr><tr><td>4</td><td>300,000</td></tr><tr><td>5</td><td>350,000</td></tr></table>	Year	Cash Flows(Rs.)	1	200,000	2	200,000	3	300,000	4	300,000	5	350,000	6
Year	Cash Flows(Rs.)													
1	200,000													
2	200,000													
3	300,000													
4	300,000													
5	350,000													

Q.4.	Attempt All													
a)	Discuss the importance of Design for Environment.	4												
b)	Write short note on : Expert System.	4												
c)	Explain with neat sketch Fused Deposition Modeling (FDM).	6												
d)	<div>The expected cash flow of the project, which involves an investment outlay of Rs.1,000,000 are as follows:<table><tr><th>Year</th><th>Cash Flows(Rs.)</th></tr><tr><td>1</td><td>200,000</td></tr><tr><td>2</td><td>300,000</td></tr><tr><td>3</td><td>400,000</td></tr><tr><td>4</td><td>300,000</td></tr><tr><td>5</td><td>200,000</td></tr></table><div>The risk – adjusted discount rate for this project is 18%. Is project is worthwhile?</div></div>	Year	Cash Flows(Rs.)	1	200,000	2	300,000	3	400,000	4	300,000	5	200,000	6
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