

- Q.18 Explain the design consideration for Cast components. (CO3)
- Q.19 Write a short note on Design and Manufacturing Cycle. (CO3)
- Q.20 Describe the Operation Planning Sheet. (CO4)
- Q.21 Explain the Group Technology and Part Coding. (CO4)
- Q.22 Describe the different Costing Elements. (CO5)

SECTION-D

Note: Long answer questions. Attempt any two questions out of three Questions. (2x8=16)

- Q.23 Explain the depreciation and causes of depreciation in detail. (CO3)
- Q.24 Explain the design of sheet metal parts in details. (CO4)
- Q.25 Write Short Notes on
- a) Factory Expenses (CO5)
 - b) Cost Estimation (CO5)

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**6th Sem. / Automation & Robotics
Sub.: Product Design & Process Planning**

Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple type Questions. All Questions are compulsory. (6x1=6)

- Q.1 In product design, what is the purpose of a design brief? (CO1)
- a) To outline the budget for the project
 - b) To provide a detailed project timeline
 - c) To define the design requirements and goals
 - d) None of the above
- Q.2 What is the significance of the concept of "Design Thinking" in product design? (CO1)
- a) It emphasizes a linear and structured design process
 - b) It focuses on understanding user needs and generating creative solutions
 - c) It prioritizes cost efficiency over innovation
 - d) None of the above

- Q.3 What is the purpose of usability testing in product design? (CO2)
- a) To evaluate the product's market potential
 - b) To assess the products's environmental impact
 - c) To ensure that the product is user friendly
 - d) None of the above
- Q.4 Which of the following is a key consideration in sustainable product design? (CO2)
- a) Maximizing production speed
 - b) Minimizing material waste
 - c) Prioritizing complex features
 - d) Ignoring end of life disposal
- Q.5 Element's of Cost of a product are: (CO5)
- a) Material only
 - b) Labour only
 - c) Expenses only
 - d) Material, Labour & expenses
- Q.6 Conversion cost includes cost of converting..... into.....
- a) Raw material, WIP
 - b) Raw material, Finished goods
 - c) WIP, Finished goods
 - d) Finished goods, Saleable goods

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

- Q.7 Define Product? (CO1)
- Q.8 Define Product Development? (CO1)
- Q.9 Define Product Life Cycle. (CO1)
- Q.10 Define Strength? (CO3)
- Q.11 Define Toughness? (CO3)
- Q.12 Define Standardization. (CO3)

SECTION-C

Note: Short answer type Questions. Attempt any eight questions out of ten Questions. (8x4=32)

- Q.13 Explain the Design Development process of a product? (CO1)
- Q.14 Explain the Modeling and Simulation in design. (CO2)
- Q.15 Explain the functional requirements for general design. (CO1)
- Q.16 Explain the effect of Environment in design development. (CO3)
- Q.17 Classify the Engineering Materials. (CO2)