



B.Tech IV Year II Semester (R15) Regular Examinations April 2019

**PRODUCT DESIGN**

(Mechanical Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**

(Compulsory Question)

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1 Answer the following: (10 X 02 = 20 Marks)

- What is the need of product development?
- Write the importance of leadership for product development in organization.
- What is need of refining the requirement?
- How can you define the problem statement?
- What is aim of abstraction?
- Briefly discuss the importance of Ergonomics in product design.
- Write note on design for manufacturing.
- List the advantages of Adaptronics.
- What are the applications of mechatronics?
- Describe the fault-free design.

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

2 Explain about flow of work during the process of designing a product with example.

**OR**

3 Explain the following in connection with product development:

- Interdisciplinary cooperation.
- Leadership.
- Team behavior.

**UNIT – II**

4 Discuss the importance of task clarification in product development and setting up of requirement list.

**OR**

5 How can you compile requirements list? Write its practical applications.

**UNIT – III**

6 Define conceptual design and explain different methods to develop concept.

**OR**

7 Describe the selection of working structure and its practical applications.

**UNIT – IV**

8 Explain steps involved in embodiment design with an example.

**OR**

9 Explain the terms:

- Design against corrosion.
- Design to minimize wear.
- Design to ergonomics.
- Design for recycling.

**UNIT – V**

10 Explain the general functions and behavior of mechanical connections with examples.

**OR**

11 Importance of mechatronics in present industrial revolution.

