

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)

- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) What is the need of product development?
 - (b) Write the importance of leadership for product development in organization.
 - (c) What is need of refining the requirement?
 - (d) How can you define the problem statement?
 - (e) What is aim of abstraction?
 - (f) Briefly discuss the importance of Ergonomics in product design.
 - (g) Write note on design for manufacturing.
 - (h) List the advantages of Adaptronics.
 - (i) What are the applications of mechatronics?
 - (j) 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:
- (a) Interdisciplinary cooperation.
 - (b) Leadership.
 - (c) 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:
- (a) Design against corrosion.
 - (b) Design to minimize wear.
 - (c) Design to ergonomics.
 - (d) 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.