Reg. No.												

Question Paper Code	11535

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Sixth Semester

Production Engineering

PR8072 - NEW PRODUCT DEVELOPMENT

(Regulations 2017)

Duration: 3 Hours   Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

Marks, K-Level, CO

1. State the need for developing products. — *2,K1,CO1*
2. Elucidate about market segments. — *2,K2,CO1*
3. In what way, customer need is identified? — *2,K1,CO2*
4. State the reasons for benchmarking. — *2,K1,CO2*
5. Differentiate between the terms creativity, invention and innovation. — *2,K1,CO3*
6. Name the 4 inventive principles used in TRIZ. — *2,K2,CO3*
7. Brief about Pugh concept selection method. — *2,K2,CO4*
8. What is product architecture? Classify its different types. — *2,K1,CO4*
9. Write the significance of ergonomic factors design in product development. — *2,K1,CO5*
10. Explain about value analysis in costing. — *2,K2,CO6*

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

11. a) Enumerate the importance of engineering design. — *13,K2,CO1*

    OR

    b) Discuss the various phases of product development. — *13,K2,CO1*

12. a) Efficiency has been defined as "doing things better" and effectiveness as "doing better things." Describe how benchmarking can be used to improve both efficiency and effectiveness. — *13,K2,CO2*

    OR

    b) Write a short note on the following. — *13,K2,CO2*
    (i) Voice of customer (ii) Customer Population.

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

11535

1

13. a) What would be the relative advantages and disadvantages of involving actual customers in the concept generation process? *13,K2,CO3*

OR

b) Describe TRIZ methodology in detail. *13,K2,CO3*

14. a) Design the product form both "from the inside out" and "from the outside in" for a simple product such as stapler, a telephone and decide. *13,K3,CO4*

OR

b) How can the concept selection methods be used to benchmark or evaluate existing products? Perform such an evaluation for five automobiles you might consider purchasing. *13,K3,CO4*

15. a) Compare the slot modular architecture, bus modular architecture and section Modular architecture. *13,K3,CO5*

OR

b) Briefly explain about prototyping and testing with example. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) What is activity based costing? Discuss the methods of developing cost estimates in product development. *15,K2,CO6*

OR

b) By what cause-and-effect mechanism does ID affect a product's manufacturing cost? Under what conditions would ID increase or decrease manufacturing cost? *15,K2,CO6*