

Total No. of Questions : 8]

SEAT No. :

P-650

[Total No. of Pages : 2

[6004]-611

B. E. (Mechanical Engineering)

ELECTIVE IV: PRODUCT DESIGN AND DEVELOPMENT

(2019 Pattern) (Semester - VII) (402045A)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Use of electronic pocket calculator is allowed.
- 5) Assume suitable data, if necessary.

- Q1) a) List down different methods used for product teardown process and explain any one. [7]
- b) Describe in detail reverse engineering [6]
- c) Explain Economic analysis in product analysis. [4]

OR

- Q2) a) What is concept selection? Explain Pugh's chart with example. [7]
- b) Write a short note on SWOT analysis for a selection of profitable product. [6]
- c) What is product policy of an organization? List down various product policies. [4]

- Q3) a) What is Ergonomics in design? Explain types of Ergonomics with example. [7]
- b) Explain BOM with example. [6]
- c) Define Limit, Tolerance and Fit. [4]

OR

P.T.O.

- Q4)** a) What is product architecture? Explain types of product architecture. [7]
b) What is the need for engineering drawing? Classify engineering drawing. [6]
c) What is Fit? Describe the types of Fits. [4]

- Q5)** a) List down different methods of economic analysis of product and explain break even analysis. [8]
b) What is Rapid prototyping? Define and enlist various methods of prototyping [6]
c) Define letter of intent, purchase order and product costing in vendor development. [4]

OR

- Q6)** a) Explain stereolithography in detail with suitable sketch. [8]
b) What is production capacity planning? Explain the steps followed in planning. [6]
c) Why homologation certificate is important in design and development? Explain with example. [4]

- Q7)** a) Write a short note on APQP. [8]
b) Write a short note on DFMEA. [6]
c) Discuss the elements of PLM in detail. [4]

OR

- Q8)** a) List down types of FMEA and explain steps of FMEA. [8]
b) Differentiate Value analysis and value engineering. [6]
c) What are guidelines for design for robustness? Discuss. [4]

