Total No. of Questions : 8]

SEAT No. :

PB2368

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B.E. (Mechanical Engineering)

PRODUCT DESIGN & DEVELOPMENT

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

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidates:

1) ***Attempt Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Use of electronic pocket calculator is allowed.***
4) ***Assume suitable data if necessary.***
5) ***Figures to the right indicate full Marks***

Q1) a) Explain subtract and operate procedure for product teardown process. **[7]**

b) Describe in detail benchmarking. **[6]**

c) Explain Product characteristics 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 are the basic principles of dimensioning **[7]**

b) Explain BOM with example. **[6]**

c) Define Limit, Tolerance and Fit **[4]**

OR

Q4) a) What is product architecture? Explain types of product architecture. **[7]**

b) List down and explain different elements of production drawing. **[6]**

c) Define Tolerance? describe the types of Tolerances. **[4]**

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Q5) a) List down different design simulation techniques and explain any one. **[8]**

b) What is Rapid prototyping? Define and enlist various methods of prototyping. **[6]**

c) Explain Simulation driven design. **[4]**

OR

Q6) a) Write on make vs buy decision in product development with example. **[8]**

b) Write note on Additive manufacturing **[6]**

c) Differentiate Product testing and product validation. **[4]**

Q7) a) Write a short note on Design for robustness. **[8]**

b) Write a short note on Product data Management (PDM). **[6]**

c) Discuss the elements of PLM in detail. **[4]**

OR

Q8) a) Explain FMEA with example. **[8]**

b) Differentiate Value analysis and value engineering. **[6]**

c) Write a short note on Product lifecycle management (PLM). **[4]**