Total No. of Questions : 8]

SEAT No. :

PA-2641

[Total No. of Pages : 2

[5927]-421

B.E. (Mechanical Engineering)

PRODUCT DESIGN AND DEVELOPMENT

(2019 Pattern) (Semester - VII) (Elective - IV) (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 benchmarking. **[6]**

c) What is concept analysis? List down different aspects of concept analysis. **[4]**

OR

Q2) a) What is concept selection? Explain Pugh's chart with example. **[7]**

b) Write a short note on FAST method. **[6]**

c) What is product policy of an organization? List down various product policies. **[4]**

Q3) a) What is product modularity? Explain types of Modularity. **[7]**

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

c) What is Tolerance? Describe the types of tolerances. **[4]**

OR

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

b) What is dimensioning? Describe arrangement of dimensioning. **[6]**

c) What is Fit? Describe the types of Fits. **[4]**

P.T.O.

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 stereo lithography 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 any one with example. **[8]**

b) Write a short note on PDM. **[6]**

c) Discuss design for robustness in detail. **[4]**

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