Total No. of Questions : 8]

P-6671

SEAT No. :

[Total No. of Pages : 2

Max. Marks : 70

[6181]-239

B.E. (Mechanical Engineering) PRODUCT DESIGN AND DEVELOPMENT (2019 Pattern) (Semester - VII) (402045A) (Elective - IV)

Time : 2½ Hours]

Instructions to the candidates:

- 1) Solve 0.1 or 0.2, 0.3 or 0.4 0.5 or 0.6, 0.7 or 0.8.
- 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) Explain SWOT analysis in selecting profitable product concept. [7]

- b) Describe in detail reverse engineering. [6]
- c) Explain Economic analysis in product analysis. [4]
- *Q2*) a) Explain concept analysis considering functional, marketing, operational etc. aspect. [7]
 - b) Which are the different idea generation approaches use in product design and development.
 - 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.
 - c) Define Limit, Tolerance and Fit.

OR

- 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 part print analysis? How it is important in product development. [4]

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[6]

[4]

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Q5) a)	What is production capacity planning? Explain the steps followe planning.	d in [8]
b)	What is Rapid prototyping? Define and enlist various method prototyping.	s of [6]
c)	Define letter of intent, purchase order and product costing in ver development. OR	ndor [4]
Q6) a)	Explain stereolithography in detail with suitable sketch.	[8]
b)	Explain FEA with example.	[6]
c)	Why homologation certificate is important in design and development Explain with example.	ent? [4]
Q7) a)	What is APQP, what role it plays in robust design and developme	ent?
	Nr. O	[8]
b) 💡	Compare Value analysis and Value engineering.	[6]
c)	Discuss the elements of PLM in detail.	[4]
	OR OV	
Q8) a)	Explain application of Teamcenter/Nx Manager in Product design development.	and [8]
b)	Compare PFMEA AND DEMEA.	[6]
c)	What are guidelines for design for robustness? Discuss.	
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