Register Number:……..

KUMARAGURU
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B.E DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Seventh Semester

ELECTRONICS AND COMMUNICATION ENGINEERING

U18ECE0061**:** Product Design and Development

COURSE OUTCOMES

CO1: Apply concepts of product development and outline product planning process.

CO2: Apply relative importance of customer needs in establishing product specifications.

CO3: Identify concept generation activities and summarize the methodology involved in concept. selection and testing.

CO4: Outline supply chain considerations in product architecture and understand the industrial design process.

CO5: Apply design for manufacturing concepts in estimating manufacturing costs.

CO6: Apply principles of prototyping in product development economics and highlight importance of managing projects.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions: -
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Identify the category of product or service and justify the same – Amazon.	CO1	[K_2]
2.	Recall any three methods to gather raw data from customers.	CO2	[K_1]
3.	Rephrase the significance of concept classification tree.	CO3	[K_2]
4.	Do the structured methods of concept selection offer any benefit? Justify your answer.	CO3	[K_2]
5.	With respect to industrial design perspective, label the features of technology driven products.	CO4	[K_2]
6.	Interpret the type of modular architecture where all the interfaces are of same type.	CO4	[K_2]
7.	Assess the key benefits of Design for Assembly.	CO5	[K_2]
8.	Report on the below statement “Prototyping helps in answering questions of customers related to performance & feasibility”.	CO6	[K_2]
9.	List the different phases of product development process.	CO1	[K_1]
10.	Compare target specifications from refined specifications.	CO2	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Illustrate the problems that arise when there is no proper product plan, with an example each.	8	CO1	[K_2]
	b)	Elaborate the different steps involved in Product planning process.	8	CO1	[K_2]
12.	a)	Outline the scope of Customer needs process and explain the steps involved in the process.	8	CO2	[K_2]
	b)	Summarize the process and steps involved in setting target and final specifications.	8	CO2	[K_2]
13.	a)	Simplify the entire concept generation process briefing it with a neat flowchart.	8	CO3	[K_2]
	b)	Explain the methodologies of concept screening and scoring .	8	CO3	[K_2]
14.	a)	Discuss the implications and establishment of product architecture..	8	CO4	[K_2]
	b)	Elaborate the importance and purpose of Delayed differentiation.	8	CO4	[K_2]
15.		Discuss the scope and significance of Design For Manufacturing (DFM). Also, elaborate how manufacturing costs are estimated with the help of DFM.	16	CO5	[K_2]
16.		Summarize the Prototyping technologies. Explain the prototyping strategies with the steps involved in detail.	16	CO6	[K_2]

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