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SEVENTH Semester B. E. Degree (Autonomous) Semester End Examination, SEE, December 2019/January 2020																						
Department of Mechanical Engineering																						
PRODUCT DESIGN & DEVELOPMENT																						
Time: 3 Hours										(Model Question Paper – 1)							Maximum Marks: 100					
Instructions to students:																						
1. Answer ANY ONE FULL question from EACH UNIT.																						
2. Use black ball point pen only for text, fig, table etc.,																						
UNIT-1																						
Q. No.	Questions															Marks	CO	RBT Level				
1. (a)	Recognize and explain the characteristics of successful product development exercise.															10	CO1	L1				
(b)	Illustrate the composition of a product development team for an electromechanical product of modest complexity with the help of a neat block diagram.															10	CO1	L3				
OR																						
2. (a)	Identify & Explain the challenges faced during product development															10	CO1	L2				
(b)	Demonstrate the different phases of a generic product development process.															10	CO1	L2				
UNIT-2																						
3. (a)	Illustrate the role of resource allocations in product development and plan timing.															10	CO2	L2				
(b)	Summarize the different methods of gathering raw data from customers to identify the needs															10	CO2	L2				
OR																						
4. (a)	Demonstrate the different steps involved in the process of establishing target specifications															10	CO2	L2				
(b)	Discuss how to develop technical models of the product															10	CO2	L2				
UNIT-3																						
5. (a)	Illustrate 05 steps concept generation method with a block diagram															10	CO3	L3				
(b)	What is product architecture? Demonstrate the types of modular architectures.															10	CO3	L1				

OR				
6. (a)	What is industrial design? Analyze the ergonomic and aesthetic needs	10	CO3	L1
(b)	Identify & explain the different types of industrial design process	10	CO3	L2
UNIT-4				
7. (a)	Illustrate the design for manufacturing (DFM) process with block diagram	10	CO4	L3
(b)	What is prototyping? Illustrate the different steps of prototyping	10	CO4	L1
OR				
8. (a)	Discuss the different steps in robust design process	10	CO4	L2
(b)	Demonstrate the principles of prototyping during product development	10	CO4	L2
UNIT-5				
9. (a)	Write a note on perform sensitivity analysis	10	CO5	L1
(b)	How are the following problems attended in order to smoothly execute a Project? i. Coordination mechanisms ii. Assessing project status	10	CO5	L2
OR				
10. (a)	Discuss the set of guidelines for accelerating product development projects. explain briefly	10	CO5	L2
(b)	Write a note on Gantt charts and PERT charts	10	CO5	L1
