

THE KAVERY ENGINEERING COLLEGE*(An Autonomous Institution)***UG/PG DEGREE END SEMESTER THEORY EXAMINATIONS, APRIL-MAY 2026*****First Semester******Mechanical Engineering*****PPDT2413 - CREATIVITY AND INNOVATION*****Regulations - 2024******Duration: 3 Hrs.******Maximum: 100 Marks******PART – A (ANSWER ALL QUESTIONS) (Marks 10*2=20)***

<i>Q. No</i>	<i>Questions</i>	<i>BTL</i>	<i>CO</i>	<i>Marks</i>
1.	Define "Directed Creativity" as per the essential theory of creativity.	K1	1	2
2.	How would you explain the role of heuristics in supporting creative thinking?	K2	1	2
3.	List any three phases of the ICEDIP model of the creative process.	K1	2	2
4.	How would you interpret the role of the Incubation phase in the ICEDIP model of creativity?	K2	2	2
5.	List the three levels of emotional design as proposed by Don Norman.	K1	3	2
6.	How would you explain the importance of incremental improvement in the creative problem-solving process?	K2	3	2
7.	Name the creativity activation method that uses a table listing object features and their variants to generate new combinations	K1	4	2
8.	How would you explain the purpose of Altshuller's Contradiction Matrix in resolving technical contradictions during the innovation process?	K2	4	2
9.	List the two types of disruption described in the Disruptive Innovation Model	K1	5	2
10.	How would you explain the process of de-commoditization in innovation management?	K2	5	2

PART – B (ANSWER ALL QUESTIONS) (Marks 5*16 = 80)

<i>Q. No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11. a	Outline the concept of Directed Creativity, including the need for creative thinking in the pursuit of quality and the Theory of the Mechanics of Mind	K1	1	16
	Or			
b	Present the roles of heuristics and models in creative thinking, and list the attitudes, approaches, and actions that support creative thinking as per the unit outline	K1	1	16
12. a	Explain how the tools that prepare the mind for creative thought (such as Inspiration, Clarification, and Distillation in the ICEDIP model) stimulate imagination and bridge the gap between creativity and innovation. Support your explanation with clear descriptions.	K2	2	16
	Or			

	b	Discuss the roles of the Evaluation, Incubation, and Perspiration phases in the ICEDIP model, and explain how each phase contributes to the overall creative process.	K2	2	16
13.	a	Using the three levels of emotional design, apply each to a product of your choice (e.g., smartphone, chair, or car). Explain how design decisions at each level enhance user experience	K3	3	16
		Or			
	b	Choose an everyday object or common service and demonstrate how creative problem solving coupled with incremental improvement can be used to redesign it. Outline the improvements and the creative steps involved	K3	3	16
14.	a	Analyze the Morphological Box method by identifying its key components and explaining how each contributes to enhancing inventive problem-solving in product design	K4	4	16
		Or			
	b	Analyze Altshuller's Contradiction Matrix and Inventive Principles by examining how they interact to resolve technical contradictions. Illustrate your answer with an example of a real-world engineering problem	K4	4	16
15.	a	Design an innovative business model for a new disruptive venture by integrating both low-end and new-market disruption strategies. Describe your model and explain how it addresses the needs of underserved or cost-sensitive customers	K6	5	16
		Or			
	b	Propose a strategic framework that combines de-commoditization processes, strategy formulation, and the role of senior executives to drive sustainable growth in a mature industry. Include specific actions and mechanisms in your framework	K6	5	16
