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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: IV - THEORY EXAMINATION (2025- 2026)

Subject: Design Thinking

Time: 2 Hours

Max. Marks: 50

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.
2. Maximum marks for each question are indicated on right -hand side of each question.
3. Illustrate your answers with neat sketches wherever necessary.
4. Assume suitable data if necessary.
5. Preferably, write the answers in sequential order.
6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

15

1. Attempt all parts:-

- (1.1) In the CATWOE analysis framework, Define does the W stand for. (CO1, K1) 1
- (a) Wealth
 - (b) Wisdom
 - (c) Worldview
 - (d) Work
- (1.2) A student wants to take a job but lacks transport. You redefine the problem from "Buy a car" to "Access transport." Define specific benefit does this redefinition offer. (CO2, K3) 1
- (a) It restricts the solution to buying a vehicle.
 - (b) It opens up broader possibilities (e.g., ride-sharing, public transport) beyond just purchasing a car.
 - (c) It focuses only on the financial constraint.
 - (d) It ignores the user's need for a job.
- (1.3) If a team is "Free-riding" during brainstorming, what is happening. (CO3, K2) 1
- (a) Everyone is working hard.
 - (b) Individuals rely on others to do the work (social loafing).
 - (c) The team is brainstorming outdoors.
 - (d) The ideas are free of cost.
- (1.4) State the type of feedback is given after an issue arises, like a bug report. (CO4, K1) 1
- (a) Proactive Feedback
 - (b) Ongoing Feedback
 - (c) Reactive Feedback

(d)	Strategic Feedback	
(1.5)	Analyze the SWOT matrix. State the two factors are considered Internal to the organization. (CO4, K4)	1
(a)	Opportunities and Threats	
(b)	Strengths and Weaknesses	
(c)	Strengths and Opportunities	
(d)	Weaknesses and Threats	
2.	Attempt all parts:-	
(2.1)	Discuss the "Knowledge Funnel" as described by Roger Martin. (CO1, K2)	2
(2.2)	Define a "Wicked Problem" in the context of the Define stage. (CO2, K1)	2
(2.3)	Discuss "Yellow Hat" focused on. (CO3, K1)	2
(2.4)	List three characteristics required for successful ideation. (CO3, K1)	2
(2.5)	Discuss the "Q-B-L" framework. (CO4, K1)	2
	SECTION-B	15
3.	Answer any <u>three</u> of the following:-	
(3.1)	Discuss the concept of "Persona" creation. Create a detailed sample persona for a "Student from a rural background joining an urban college." (CO1, K3)	5
(3.2)	Discuss the criteria for a successful Problem Statement. Why must it be action-oriented, human-centered, and assumption-free. (CO2, K2)	5
(3.3)	Describe the "Ice Cream Stick Challenge." Why is brevity and focus essential for a problem statement? Relate this to the "Right Scope" criteria. (CO2, K2)	5
(3.4)	Elaborate on the "Six Thinking Hats" technique with a detailed example (e.g., a coffee shop problem). Describe how a team would use each hat to solve it. (CO3, K3)	5
(3.5)	Discuss the "Theory of Prioritization" in Convergence. How do the "10-100-1000 gm" and "Q-B-L" frameworks work together. (CO4, K4)	5
	SECTION-C	20
4.	Answer any <u>five</u> of the following:-	
(4.1)	Discuss the "Three Laws of Design Thinking" with brief descriptions of each. (CO1, K2)	4
(4.2)	Write the "3 Capacity Levers (VAL)" and describe how "Limiting Beliefs" act as capacity holders. (CO1, K3)	4
(4.3)	Analyze the "Kitchen Staff" Persona from the Good Kitchen case. Define their motivations and fears. (CO2, K4)	4
(4.4)	Discuss "How Might We" questions considered a bridge to the Ideation stage. (CO2, K2)	4
(4.5)	Discuss the "Six Thinking Hats" framework. Briefly describe the function of each hat. (CO3, K2)	4
(4.6)	Analyze the "Flipkart" case study. How did ideation help them solve the problem of low online trust in India. (CO3, K4)	4

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| (4.7) | Discuss the business rationale component of a Napkin Pitch. (CO4, K2) | 4 |
| (4.8) | Compare "Sketches" and "Mock-ups" as prototyping tools. (CO4, K4) | 4 |

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