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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 (2022 - 2023)

Subject: Design Thinking

Time: 3 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-a. The Empathize phase deals with: (CO 1) 1
- (a) Fine tune products or services till they are no more bugs in them
 - (b) Get in the shoes of the customers and understand the situation from their perspective
 - (c) Interviewing people to get their opinions, feedback and shortcomings of your current product/service
 - (d) Prototype a concept and check if it stands the test of the market
- 1-b. A good problem statement should thus have the following traits: (CO 2) 1
- (a) Human-centered
 - (b) Broad enough for creative freedom
 - (c) Narrow enough to make it manageable
 - (d) All of the above
- 1-c. _____ is the advantages of sketches? (CO 3) 1
- (a) think more openly and creatively about your ideas
 - (b) create abundant ideas without worrying about their quality

	(c) invent and explore concepts by being able to record ideas quickly	
	(d) All of the above	
1-d.	Convergent thinking is a method of (CO 4)	1
	(a) Narrowing the available solutions to a final solution	
	(b) Finding many possible solutions in the first stance	
	(c) Both	
	(d) None	
1-e.is the first step of hypothesis testing. (CO 5)	1
	(a) research	
	(b) validation	
	(c) formulation	
	(d) recording	
2. Attempt all parts:-		
2.a.	Define wicked Problems. (CO 1)	2
2.b.	Explain how might we tool in case of a designing a mobile phone cover. (CO 2)	2
2.c.	Write short note on what White hat represents. (CO 3)	2
2.d.	Describe any two tools used for prototyping. (CO 4)	2
2.e.	Define Taguchi method. (CO 5)	2
SECTION B		15
3. Answer any <u>three</u> of the following:-		
3-a.	What is a wicked problem? Why are they difficult to solve? State their characteristics. (CO 1)	5
3-b.	Explain POV ? And solve the old man vehicle problem who lives in a city in proper template. (CO 2)	5
3.c.	Discuss three laws of design thinking. (CO 3)	5
3.d.	Explain SWOT analysis with suitable example. (CO 4)	5
3.e.	Define Guerrilla Interviews test. Explain the significance of guerrilla research. (CO 5)	5
SECTION C		20
4. Answer any <u>one</u> of the following:-		
4-a.	Describe frictional forces. How can we overcome them? (CO 1)	4
4-b.	Discuss the Arcturus IV theory given by Professor John E. Arnold. What are your	4

imagination for Arcturus IV (CO 1)

5. Answer any one of the following:-

- 5-a. Explain 5 Why's tool with suitable example. (CO 2) 4
- 5-b. Write down the emphasis of Define Stage of Design Thinking. Explain POV tool with example. (CO 2) 4

6. Answer any one of the following:-

- 6-a. Explain the Steps to conduct a “How Might We” exercise. Give importance of Ice Cream Stick challenge to build a HMW statement. (CO 3) 4
- 6-b. Describe how does the Double Diamond Approach works. (CO 3) 4

7. Answer any one of the following:-

- 7-a. Write short note on napkin pitch with suitable example. (CO 4) 4
- 7-b. Discuss the check-list for designing a good minimum viable product. (CO 4) 4

8. Answer any one of the following:-

- 8-a. Define Vroom Yetton Matrix. How it helps in decision making? (CO 5) 4
- 8-b. What is alpha and beta testing? Differentiate them. (CO 5) 4