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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: III - THEORY EXAMINATION (2023-2024)

Subject: Design Thinking-I

Time: 3 Hours

Max. Marks: 100

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

20

1. Attempt all parts:-

- 1-a. As per the definition of Design Thinking by IDEO, which one is the main component- (CO1) 1
- (a) Desirability
 - (b) Feasibility
 - (c) Viability
 - (d) All of the above
- 1-b. Design Thinking typically helps in _____ [CO1] 1
- (a) Innovation
 - (b) Data analytics
 - (c) Financial planning
 - (d) Operational efficiency
- 1-c. Children tend to learn important values and behaviors from their family, by observing them. (CO2) 1
- (a) TRUE
 - (b) FALSE
- 1-d. Breaking down a problem into its constituent parts during team discussion is which of the following steps in the Standard Agenda?(CO2) 1
- (a) Analysing the problem
 - (b) Identification of problem

- (c) Evaluation Problem Solutions
- (d) Criteria development
- 1-e. People Centered Design Methodology involves [CO3] 1
- (a) A problem solving approach for people that is linear and convergent
- (b) A problem solving approach which is abstract and results in making people buy products
- (c) A problem solving approach for people that both diverges and converges
- 1-f. Which of these is an effective question to use in the transition stage between Define and Ideate in design thinking? 1
- (a) How many prototypes should we develop?
- (b) How might we increase battery life?
- (c) What is our customer's problem?
- (d) How are we going to solve this?
- 1-g. Your dad read that using cell phones can cause brain cancer. He refuses to buy a cell phone because he is afraid of contracting brain cancer from using one. No matter how much you try to persuade him with other information, he will not listen. This is an example of?(CO4) 1
- (a) Confirmation Bias
- (b) Ostrich Bias
- (c) Blindspot Bias
- (d) Anchoring Bias
- 1-h. Characteristics of Critical Thinkers are..... (CO4) 1
- (a) Observation
- (b) Curiosity
- (c) Introspection
- (d) All of the above
- 1-i. Scientific inquiry begins with [CO5] 1
- (a) A problem to solve or a question to answer
- (b) Observation
- (c) Laboratory tests
- (d) A checklist of procedures
- 1-j. Statements given in support of another statement are called [CO5] 1
- (a) Conclusions
- (b) Premises
- (c) Arguments
- (d) Summaries

2. Attempt all parts:-

- 2.a. Explain each one of the three Capacity Levers that drive the design mind. 2

- 2.b. How prosperity can be ensured in human life?(CO2) 2
- 2.c. What is 5 Why tool. How it helps in root cause finding. (CO3) 2
- 2.d. Explain 16 characteristics of critical thinkers.(CO4) 2
- 2.e. Briefly discuss the significance of propositional logic in critical thinking? 2

SECTION-B

30

3. Answer any five of the following:-

- 3-a. How is Design thinking different from Critical Thinking? (CO1) 6
- 3-b. Who benefits from the DT and how? What kinds of problems can it be applied towards? (CO1) 6
- 3-c. Describe the theory of Maccasin walk.(CO2) 6
- 3-d. Discuss the importance of societal culture in reference to current state.(CO2) 6
- 3.e. A financial advisor needs a way to have meaningful conversations with more clients because business grows through genuine conversation with clients – not through paperwork. Create a POV statement. (CO3) 6
- 3.f. In what way is critical thinking “thinking outside the box”? (CO4) 6
- 3.g. Discuss the significance of argument and statement in design thinking. 6

SECTION-C

50

4. Answer any one of the following:-

- 4-a. Give any 2 instances of importance of listening over hearing. Illustrate with real time examples (CO1) 10
- 4-b. What are 13 musical notes of Design mindset. How do they impact our thinking (CO1) 10

5. Answer any one of the following:-

- 5-a. Discuss the ways to overcome the negative sentiments.(CO2) 10
- 5-b. Describe the importance of ethical behaviour in society.(CO2) 10

6. Answer any one of the following:-

- 6-a. Attempt a journey map of a first-year student who comes from a rural background and enters your classroom-
(i) Draw the persona, (ii) Identify various touch points, (iii) Capture journey map elements at each touch point and rate them by plotting a graph (CO3) 10
- 6-b. How to make a classroom experience interesting for students (i) Do the Brainstorming (ii) Use Random Association Technique (iii) Construct a Mindmap (iv) Apply 10gm, 100gm, 1000gm (v) Identify QBL (CO3) 10

7. Answer any one of the following:-

- 7-a. Is background knowledge important for critical thinking? Justify it.(CO4) 10
- 7-b. Contrast between argumentation versus rhetoric.(CO4) 10

8. Answer any one of the following:-

- 8-a. Give three different ways of judging the presence of an argument with suitable 10

examples.

- 8-b. Write short note on following: (1) Premise and conclusion (2) Truth and logic condition 10

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