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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.Tech (Integrated)

SEM: II - 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. Design Thinking is: (CO1)

1

- (a) Thinking about design
- (b) Designing ways in which people think
- (c) Asking users to solve problems
- (d) Defining, framing and solving problems from users' perspectives

1-b. _____ is the type of thinking to be applied when both the solutions and problems is not clear. (CO1)

1

- (a) Lateral thinking
- (b) Design thinking
- (c) Lean thinking
- (d) Critical thinking

1-c. Design thinking proces starts with _____. (CO2)

1

- (a) Feel
- (b) Ideate
- (c) Emaphy
- (d) Communicate

1-d. Mode in which one creates new concepts and ideas, is called: (CO2)

1

- (a) Ideate
- (b) Feel

- (c) Empathy
- (d) Prototype
- 1-e. A good problem statement should have the following traits: (CO3) 1
- (a) Human-centered
- (b) Broad enough for creative freedom
- (c) Narrow enough to make it manageable
- (d) All of the above
- 1-f. In the _____ stage you synthesise your observations about your users from the first stage, the Empathise stage. (CO3) 1
- (a) Define
- (b) Ideate
- (c) Prototype
- (d) Test
- 1-g. Critical thinking concerns with: (CO4) 1
- (a) Determining the cause of our beliefs
- (b) Pinpointing the psychological basis of our beliefs
- (c) Determining the quality of our beliefs
- (d) Assessing the practical impact of our beliefs
- 1-h. Statements given in support of another statement are called....(CO4) 1
- (a) Conclusions
- (b) Premises
- (c) Arguments
- (d) Summaries
- 1-i. An inductive argument that succeeds in providing probable, but not conclusive, logical support for its conclusion is said to be [CO5] 1
- (a) Inductive
- (b) Cogent
- (c) Weak
- (d) Strong
- 1-j. A deductively valid argument cannot have (CO5) 1
- (a) True premises and a false conclusion
- (b) False premises and a true conclusion
- (c) True premises and a true conclusion
- (d) False premises and a false conclusion
2. Attempt all parts:-
- 2.a. Why is design thinking called a non-linear process? (CO1) 2
- 2.b. Discuss the needs of self and body(CO2) 2
- 2.c. What Makes a Good Problem Statement? (CO3) 2

- 2.d. Define fundamental concepts of critical thinking. (CO4) 2
- 2.e. Discuss the method to know whether an argument is valid or invalid. (CO5) 2

SECTION-B

30

3. Answer any five of the following:-

- 3-a. Differentiate between Listening and Hearing. Give examples. (CO1) 6
- 3-b. How is Design thinking different from Critical Thinking? (CO1) 6
- 3-c. Describe the effect of culture of an institution on its working and operations. (CO2) 6
- 3-d. Enumerate significant characteristics of socialiation. (CO2) 6
- 3.e. What do you understand with Ideation stage of design thinking? (CO3) 6
- 3.f. Elaborate Bandwagon Effect and Choice-supportive Bias with example. (CO4) 6
- 3.g. Differentiate between deductive argument and an inductive argument. (CO5) 6

SECTION-C

50

4. Answer any one of the following:-

- 4-a. Explain the following term: (1) Empathy (2) Expansive Thinking (3) Experimentation (CO1) 10
- 4-b. Explain the following term: (1) Observation (2) Interviews (3) Immersion (CO1) 10

5. Answer any one of the following:-

- 5-a. Elaborate the process of socialization. (CO2) 10
- 5-b. What is prosperity? Is it different from happiness? (CO2) 10

6. Answer any one of the following:-

- 6-a. Explain the RCA for the robot stopping abruptly. (CO3) 10
- 6-b. Draw the Perosna Mapping Diagram. (CO3) 10

7. Answer any one of the following:-

- 7-a. Why does critical thinking matter? How is critical thinking related to the quality of our lives? (CO4) 10
- 7-b. Explain ideation methods to spark innovative ideas. (CO4) 10

8. Answer any one of the following:-

- 8-a. Discuss inductive reasoning and abductive reasoning. (CO5) 10
- 8-b. Write a short note on The Texas Sharpshooter Fallacy. (CO5) 10