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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 (2021 - 2022)

Subject: Design Thinking-I

Time: 3 Hours

Max. Marks: 100

General Instructions:

1. The question paper comprises three sections, A, B, and C. You are expected to answer them as directed.
2. Section A - Question No- 1 is 1 marker & Question No- 2 carries 2 marks each.
3. Section B - Question No-3 is based on external choice carrying 6 marks each.
4. Section C - Questions No. 4-8 are within unit choice questions carrying 10 marks each.
5. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION A

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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. The Empathize phase deals with: (CO1) 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-c. Mode in which one creates new concepts and ideas, is called: (CO2) 1
- (a) Ideate
  - (b) Feel
  - (c) Empathy

- (d) Prototype
- 1-d. Falling in one to one discussion is called: (CO2) 1
- (a) Ideation
  - (b) Immersion
  - (c) Observation
  - (d) Dialogue
- 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. Design thinkers ask four important questions: (CO3) 1
- (a) Who, what, where and why
  - (b) did it, does it, do you and be it
  - (c) Both of the above
  - (d) None of the above
- 1-g. A belief is worth accepting if: (CO4) 1
- (a) We have good reasons to accept it
  - (b) It is consistent with our needs
  - (c) It has not been proven wrong
  - (d) It is accepted by our peers
- 1-h. 'Avoiding bad news about a decision by ignoring data that might be negative.' The Bias represented here is: (CO4) 1
- (a) Ostrich Effect
  - (b) Optimism Bias
  - (c) Halo Effect
  - (d) Anchoring Bias
- 1-i. Statements backed by good reasons are: (CO5) 1
- (a) Worthy of strong acceptance
  - (b) To be believed with certainty
  - (c) Never false

(d) Beyond all possible doubt

- 1-j. 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

2. Attempt all parts:-

- 2.a. Explain fear element of DCAFE forces. (CO1) 2
- 2.b. Elaborate the role of education in human life. (CO2) 2
- 2.c. List down the characteristics required for successful ideation. (CO3) 2
- 2.d. Contrast between critical thinking and ordinary thinking. (CO4) 2
- 2.e. Differentiate between valid and invalid arguments. (CO5) 2

SECTION B 30

3. Answer any five of the following:-

- 3-a. Discuss the framework for Creativity and Innovation. (CO1) 6
- 3-b. Explain each one of the three capacity levers that drive the design mind. (CO1) 6
- 3-c. Enumerate significant characteristics of socialiation. (CO2) 6
- 3-d. Explain the concept of CATWOE Analysis. (CO2) 6
- 3.e. Describe Edward de Bono's six thinking hats and explain their role in problem solving. (CO3) 6
- 3.f. Describe confirmation bias and fundamental attribution error with example for each. (CO4) 6
- 3.g. Discuss the significance of argument and statement in design thinking. (CO5) 6

SECTION C 50

4. Answer any one of the following:-

- 4-a. Discuss in detail key elements of the design thinking process. Also draw a neat and clean diagram. (CO1) 10
- 4-b. Imagine yourself Education Minister of India and propose a solution to expose and help grow unique and untapping talents of children in rural India. Also mention about challenges, doubt and vulnerabilities you might have faced during the journey. (CO1) 10

5. Answer any one of the following:-

- 5-a. "Physical facilities are necessary and complete for animals, while they are necessary but not 10

- complete for humans.” Comment. (CO2)
- 5-b. Describe the culture along with its various elements in detail. (CO2) 10
6. Answer any one of the following:-
- 6-a. Apply the ideation tool to draw the process of making a cup of tea. (CO3) 10
- 6-b. Create a journey map for a rural student taken admission into your college. (CO3) 10
7. Answer any one of the following:-
- 7-a. Describe the features of critical thinking. Discuss its significance in obtaining the solution of problems. (CO4) 10
- 7-b. Describe the skills required for critical thinking. Can these skills be acquired or they are innate? Opine for both. (CO4) 10
8. Answer any one of the following:-
- 8-a. Define propositional logic and identify the role that logic plays in critical thinking with example. (CO5) 10
- 8-b. Define logical reasoning and explain its various types with suitable examples. (CO5) 10