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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

B.Tech

SEM: II - CARRY OVER THEORY EXAMINATION - MAY 2023

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. \_\_\_\_\_ is about deep listening to each other without biases and judgement. 1  
(CO1)

(a) Observation

(b) Dialogue

(c) Debate

(d) Hearing

1-b. What is not amongst 5 frictional forces- (CO1) 1

(a) Conflict

(b) Limiting belief

(c) Fear

(d) Doubt

1-c. Self exploration uses two mechanism, natural acceptance and \_\_\_\_\_. (CO2) 1

(a) Reason

(b) Experimental Validation

- (c) Logical thinking
- (d) Theoretical concepts
- 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. 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. \_\_\_\_\_ questions are questions that have the potential to spark ideation sessions such as brainstorm. (CO3) 1
- (a) How Might We (HMW)
- (b) POV
- (c) Personas
- (d) Empathy Map
- 1-g. Statements given in support of another statement are called....(CO4) 1
- (a) Conclusions
- (b) Premises
- (c) Arguments
- (d) Summaries
- 1-h. The process of reasoning from a premise or premises to a conclusion based on those premises is known as....(CO4) 1
- (a) Extended reasoning
- (b) Subordinate premise
- (c) Dialectic
- (d) Inference
- 1-i. 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

- 1-j. The scientific method that cannot be identified with any particular set of experimental or observational are\_\_\_\_. (CO5) 1
- (a) Parameters
  - (b) Goals
  - (c) Formulas
  - (d) Procedures

**2. Attempt all parts:-**

- 2.a. Why is design thinking called a non-linear process? (CO1) 2
- 2.b. What do you understand by prosperity?(CO2) 2
- 2.c. Explain brainwalk. (CO3) 2
- 2.d. List the five step process of critical thinking.(CO4) 2
- 2.e. What is an evidence? (CO5) 2

**SECTION B**

**30**

**3. Answer any five of the following:-**

- 3-a. What are 3 laws of Design Thinking? Explain with examples. (CO1) 6
- 3-b. What are different types of thinking? Explain difference between Lean Thinking and Lateral Thinking. (CO1) 6
- 3-c. Give an illustration of CATWOE analysis. (CO2) 6
- 3-d. What do you mean by universal human goal? How this can be achieved?(CO2) 6
- 3.e. Describe how does the Double Diamond Approach works. (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. What is a wicket problem? Why are they difficult to solve? State their characteristics. (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. Describe the empathy map and its application.(CO2) 10
- 5-b. Describe the 9 Feelings in relationship.(CO2) 10

**6. Answer any one of the following:-**

- 6-a. Explain RCA(Root Cause Analysis) with example. (CO3) 10
- 6-b. We have to make my coffee shop friendly for non-English speaking customers. 10  
Use 5 Why tool and create a HMW question. (CO3)

**7. Answer any one of the following:-**

- 7-a. Demonstrate cognitive bias. What are their types? (CO4) 10
- 7-b. Describe the skills required for critical thinking. Can these skills be acquired or 10  
they are innate? Opine for both. (CO4)

**8. Answer any one of the following:-**

- 8-a. What do you understand by the term logical fallacy and describe how to avoid 10  
logical fallacies using deductive reasoning. (CO5)
- 8-b. Define reasoning and differentiate between deductive and inductive reasoning. 10  
(CO5)