DESGIN THINKING

PROFESSIONAL ELECTIVE

SEMESTER – FIFTH

These important questions have been prepared using your previous exam papers (PYQs), verified concepts, and additional reference from trusted online academic sources.
For deeper understanding, please refer to your class notes as well.

1️⃣ HIGH & LONG IMPORTANT QUESTIONS

Unit 1: What is Different about Design thinking?

1. **Define Design Thinking** and explain in detail the **Principles of Design Thinking**. Discuss how these principles differentiate Design Thinking from traditional problem-solving approaches.
2. Explain the **Basis for Design Thinking**. Discuss the essential **Design Thinking Skills** required for an individual or a team to successfully implement the methodology.

Unit 2: Listening and Empathizing Techniques

3. Elaborate on the **Design Thinking Frameworks** used in the industry. Explain the complete process flow and the critical role of each phase in generating innovative solutions.
4. What are **Ideation Tools**? Explain the techniques of **Brainstorming** and **Innovation Heuristics** in detail, highlighting how they help in discovering new sources of ideas.
5. Explain the process of **Listening and Empathizing** in Design Thinking. Describe the difference between the **Structured** and **Open-Ended Approach** in observation techniques for gathering user insights.

Unit 3: Use of Diagrams and Maps & Story Telling

6. Define and explain the practical application of the following three maps/diagrams in a Design Thinking project:
    - **Empathy Map**

  - **Affinity Diagram**
  - **Journey Map**
7. Explain the role of **Storytelling** in communicating innovation concepts. Describe the process of **Scenario Planning** and the steps involved in the **Development of Scenarios** for a new product or service.
8. How can frameworks be applied to **strengthen communication** and **sustain a culture of innovation** within an organization? Discuss the importance of assessing developer and user perspectives for potential bias.

2️⃣ IMPORTANT & SHORT QUESTIONS

1. Write a short note on the role and composition of an effective **Design Thinking Team**.
2. Differentiate between **Empathy Map** and **Journey Map**.
3. What is **Cognitive Fixedness**? Explain the methods used in Design Thinking to **overcome cognitive fixedness**.
4. Briefly explain the concept of **Behaviour Models** in the context of ideation tools.
5. How is the technique of **Improvisation** used in the storytelling phase of Design Thinking?
6. Define **Mind Map** and explain its purpose in combining ideas.
7. What is the significance of the **Evaluation Tools** used after scenario development?
8. Write a note on **Combining ideas into complex innovation concepts**.

3️⃣ "AA BHI SAKTA HAI" QUESTIONS

1. Briefly explain the concepts associated with **Viability** and **Feasibility** when proposing an innovation project.
2. What is meant by **Systemic Inspiration** and why is it essential for a Design Thinking mindset?
3. Explain the core function and output of **Frog Design** (in the context of prototyping).
4. Write a short note on the importance of identifying and mitigating **bias** when assessing developer and user perspectives.
5. What are the key characteristics of a successful **Design Thinking Workshop or Meeting**?

QUICK REVISE

Unit 1: What is Different about Design Thinking? (12 Hours)

1. The Core Difference

- **Design Thinking (DT):** A human-centered, iterative approach to problem-solving. It prioritizes **empathy** for the end-user, focuses on ideation, and uses prototyping for testing.
- **Traditional Problem-Solving:** Often logic-driven, relying on past data and analysis, and tends to be linear. DT is better for **'wicked problems'**—those that are complex, ambiguous, and ill-defined.

2. Principles of Design Thinking

Principle	Focus
Human Rule	All design activity is fundamentally social.
Ambiguity Rule	DT must preserve ambiguity; it cannot eliminate all unknowns.
Re-design Rule	All design is re-design; nothing is created from scratch.
Tangibility Rule	Make ideas tangible (prototyping) to communicate effectively.

3. Design Thinking Skills

- **Empathy:** The ability to understand and share the feelings of others (the users).
- **Integrative Thinking:** Ability to see all aspects of a problem, including contradictory ones, and create novel solutions.
- **Optimism:** Belief that a solution, no matter how challenging the constraints, is possible.
- **Experimentation:** Willingness to prototype early and fail fast to learn.

4. The Basis for Design Thinking

DT is rooted in a balance of three criteria for successful innovation:

- **Feasibility:** Is it technically possible?
- **Viability:** Can it be profitable or organizationally sustainable?
- **Desirability:** Does the user actually want it (human-centered)?

5. Design Thinking Team (Brief)

- Teams should be **cross-functional** (diverse skills and backgrounds) to foster different perspectives and systemic inspiration.
- Requires a leader who acts as a facilitator, championing the human-centered approach.

Unit 2: Listening and Empathizing Techniques (13 Hours)

1. Listening and Empathizing

- This is the initial phase (**Discovery/Empathize**). The goal is to deeply understand the user's needs, behaviors, context, and pain points.
- **Observation:** Crucial technique to understand what people *do*, not just what they *say*.
    - **Structured Approach:** Uses checklists, specific questions, and predefined metrics. Good for validating hypotheses.
    - **Open-Ended Approach:** Allows the user to lead the conversation; flexible and exploratory. Good for uncovering unknown needs.

2. Design Thinking Frameworks

The most common framework is the 5-stage model (often non-linear/iterative):

1. **Empathize:** Research users' needs.
2. **Define:** State the users' needs and insights (Problem Statement).
3. **Ideate:** Challenge assumptions and create ideas.
4. **Prototype:** Start creating solutions.
5. **Test:** Try solutions out on users.

3. Ideation Tools

- **Brainstorming:** Group technique to generate a large number of ideas; focuses on quantity over quality initially, deferring judgment.
- **Innovation Heuristics:** Mental shortcuts or rules-of-thumb to guide the search for novel solutions (e.g., 'What if we reversed the process?').
- **Behaviour Models:** Frameworks that categorize or predict human actions (e.g., Fogg's Behavior Model: Motivation + Ability + Trigger = Behavior).
- **Overcoming Cognitive Fixedness:** Techniques to break mental ruts or assumptions (e.g., changing the environment, using analogies, or forced connections).

Unit 3: Diagrams, Maps, Story Telling, and Culture (14 Hours)

1. Use of Diagrams and Maps

These tools structure complex, qualitative data gathered during the Empathize/Define phases.

Map/Diagram	Purpose
Empathy Map	Visualizes user attitudes, beliefs, pains, and gains (What they **Say, Think, Do, Feel**).
Affinity Diagram	Organizes large amounts of ideas/data by finding relationships (grouping similar notes/observations).
Mind Map	Hierarchical visual tool to structure information, ideas, or concepts around a central subject.
Journey Map	Visualizes the entire process a user goes through to achieve a goal, highlighting key touchpoints and pain points over time.

- **Combining ideas into complex innovation concepts:** Maps help identify patterns and connections, enabling the creation of holistic, multi-faceted solutions.

2. Story Telling and Scenarios

- **Story Telling (Improvisation):** Used to communicate a proposed solution powerfully, showing its context, user benefits, and emotional impact. Improvisation helps quickly test and iterate narrative concepts.
- **Scenario Planning:** Imagining multiple potential futures or contexts in which the innovation might exist.
    - **Development of Scenarios:** Creating a few distinct, plausible stories (e.g., Best-Case, Worst-Case, Most-Likely) about the future usage of the product/service.
- **Evaluation Tools:** Used to test the robustness and relevance of the proposed concept against the developed scenarios (e.g., will the solution still work if the market shifts dramatically?).
- **Frog Design and Prototyping:** Refers to the creation of tangible, rough versions of the solution (prototypes) to quickly test assumptions before investing heavily.

3. Culture and Communication

- **Bias Assessment:** Developers often have technical bias (focused on feasibility); users have experiential bias (focused on desirability). Frameworks must be applied to identify and neutralize these biases.
- **Strengthen Communication:** Use shared visual language (the Maps/Diagrams), storytelling, and prototypes to ensure everyone (users, developers, stakeholders) is aligned on the problem and the proposed solution.
- **Sustain a Culture of Innovation:** Requires organizational support for experimentation, risk-taking, psychological safety, and continuous learning from failure (fail fast, learn faster).

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