
	<b>INDIAN SCHOOL AL WADI AL KABIR</b>		
<b>Class: IX</b>	<b>Department: SCIENCE 2024 – 25</b> <b>SUBJECT: DESIGN THINKING &amp; INNOVATION</b>		<b>Date of submission: 19.11.2024</b>
<b>Worksheet No: 3,4 &amp; 5</b> <b>WITH ANSWERS</b>	<b>MODULE 3,4 &amp; 5:</b> <b>Introduction to Observation,</b> <b>Problem Identification and Empathy,</b> <b>Design Project: with focus on Observation,</b> <b>Problem Identification and Empathy,</b> <b>Fundamentals of Sketching for Ideation.</b>		<b>Note:</b> <b>A4 FILE FORMAT</b>
<b>NAME OF THE STUDENT</b>		<b>CLASS &amp; SEC: IX A TO I</b>	<b>ROLL NO.</b>

### **MULTIPLE CHOICE QUESTIONS**

1. What is the first step in the Design Thinking process?

- A) Ideation
- B) Empathy
- C) Prototyping
- D) Testing

2. Why is observation important in the Design Thinking process?

- A) To find solutions immediately
- B) To understand the user's needs and behaviors
- C) To gather opinions from people
- D) To avoid making mistakes

3. What does the term "empathy" refer to in the context of Design Thinking?

- A) Understanding the technical aspects of a problem
- B) Identifying the most expensive solutions

- C) Understanding the feelings, thoughts, and experiences of users
- D) Developing a business plan for a product

4. Which of the following is an example of a problem identification technique in Design Thinking?

- A) Brainstorming for solutions
- B) Conducting interviews and surveys
- C) Creating prototypes
- D) Testing a product in the market

5. In which phase of Design Thinking do you primarily focus on understanding the user's challenges and needs?

- A) Define
- B) Ideate
- C) Empathize
- D) Prototype

6. What is the purpose of creating empathy maps in Design Thinking?

- A) To identify the best product features
- B) To understand users' thoughts, feelings, and motivations
- C) To prioritize solutions
- D) To design a prototype

7. Which of the following is a key benefit of using the "Observation" phase in Design Thinking?

- A) It helps in quickly creating solutions without much user input
- B) It allows designers to understand user behaviors and real-life contexts
- C) It focuses on developing market-driven products
- D) It focuses primarily on the technological feasibility of the product

8. Which of the following tools can help in identifying problems during the "Problem Identification" phase?

- A) Empathy maps
- B) Prototypes
- C) Storyboards
- D) User personas

9. During the "Problem Identification" stage, it is important to:

- A) Define a problem based on assumptions
- B) Consider multiple perspectives to fully understand the user's experience
- C) Create quick solutions to address the issue
- D) Develop a prototype that can immediately fix the problem

10. Why is "Problem Identification" important in Design Thinking?

- A) It helps in developing technological solutions
- B) It ensures that the team works on solving the right problem
- C) It eliminates the need for testing prototypes
- D) It helps in designing aesthetically pleasing products

11. What is the primary purpose of sketching in the ideation phase of Design Thinking?

- A) To create a detailed final product
- B) To quickly explore and visualize different ideas and concepts
- C) To test the final product with users
- D) To plan the manufacturing process of the product

12. Why is sketching considered a valuable tool for ideation in Design Thinking?

- A) It allows for detailed planning of the final product
- B) It helps in developing prototypes before physical models are made
- C) It allows designers to explore and communicate a wide range of ideas quickly
- D) It ensures that the design is perfectly accurate from the start

13. What should a designer focus on when creating a quick sketch for ideation?

- A) Precision and accuracy in measurements
- B) Expressing the core idea and basic shape of the design
- C) Creating a polished final product illustration
- D) Adding as much detail as possible to impress others

14. Which of these types of sketches is most useful when you want to explore different versions of an idea in a short amount of time?

- A) Detailed technical drawings
- B) Wireframe sketches
- C) Rapid or thumbnail sketches
- D) Perspective drawings with exact proportions

15. The front view is called as -----

- A) Plan
- B) Elevation
- C) Section
- D) Hatching

16. **Assertion (A):** Design thinking is a user-centric approach to problem-solving, where the needs of the user are given the highest priority.

**Reason (R):** In design thinking, the focus is on understanding the users' needs, behaviors, and challenges to create innovative solutions that provide value.

- (a) Both Assertion and Reason are correct, and the Reason is the correct explanation for the Assertion.
- (b) Both Assertion and Reason are correct, but the Reason is not the correct explanation for the Assertion.
- (c) Assertion is correct, but the Reason is incorrect.
- (d) Assertion is incorrect, but the Reason is correct.

### **DESCRIPTIVE TYPE QUESTIONS**

1. Define sketching and rapid sketches.
2. Explain the terms : plan, elevation & section.
3. Define one point and two point perspective.
4. What is meant by a mindmap and questionnaire?
5. Prepare an awareness poster on the topic "Water pollution".
6. Prepare a mind map on the topic "Deforestation".
7. Prioritize and write the challenges faced in the impact of social media on students.
8. Create a funny character that can help raise awareness about "Global warming".

<b>ANSWER KEY – MULTIPLE CHOICE QUESTIONS</b>	
1	B) Empathy
2	B) To understand the user's needs and behaviors
3	C) Understanding the feelings, thoughts, and experiences of users
4	B) Conducting interviews and surveys
5	C) Empathize
6	B) To understand users' thoughts, feelings, and motivations
7	B) It allows designers to understand user behaviors and real-life contexts
8.	A) Empathy maps
9	B) Consider multiple perspectives to fully understand the user's experience
10	B) It ensures that the team works on solving the right problem
11	B) To quickly explore and visualize different ideas and concepts
12	C) It allows designers to explore and communicate a wide range of ideas quickly
13	B) Expressing the core idea and basic shape of the design
14	C) Rapid or thumbnail sketches
15	B) Elevation
16	(A)Both Assertion and Reason are correct, and the Reason is the correct explanation for the Assertion.

### **SOLUTIONS FOR DESCRIPTIVE TYPE QUESTIONS**

1. Sketching is a way of externalising your ideas and thoughts, making it visible and giving them shape and form. These sketches could be done very quickly – also known as Rapid Sketches

2. Plan: refers to the object as seen from above (top view)

Elevation: view of the object from its front side (front view)

Section: view of the object when it is cut

3. one point perspective has one vanishing point placed on the horizon line.

2 Point Perspective: two-point perspective has two vanishing points placed on the horizon line

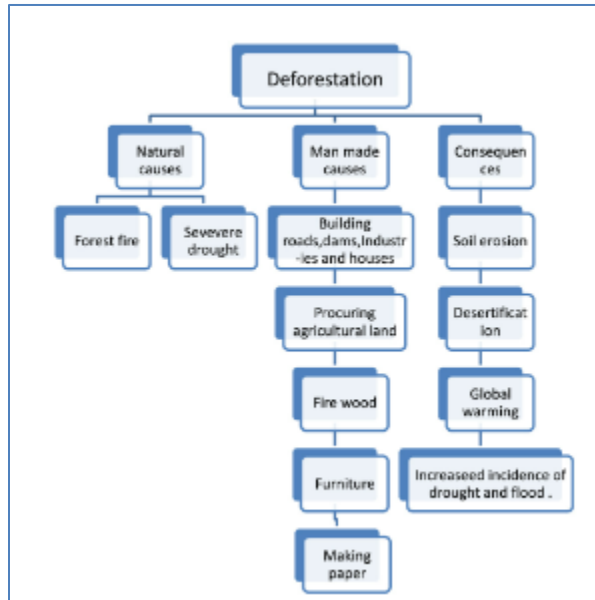
4. A **mind map** is a visual tool used to represent information, ideas, or concepts in a hierarchical and interconnected way. It starts with a central idea or theme in the middle and branches out into related subtopics, concepts, or details.

A **questionnaire** is a written set of questions used to gather information, opinions, or feedback from a group of people. The questions can be open-ended (allowing respondents to answer in their own words) or closed-ended.

## 5. Sample:



## 6. Sample:



## 7.Challenges

- Misinformation. While social media can be a powerful tool for learning and communication, it can also be a breeding ground for misinformation. ...
- Distraction and Addiction. Distraction is one of the most prevalent negative effects of social media on students and education. ...
- Cyberbullying. ...
- Privacy Concerns.

## 8. Sample:



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