

ARTIFICIAL INTELLIGENCE (Subject Code: 843) — CLASS XI

Unit 4: Introduction to Capstone Project

Topic: Empathy Map (Design Thinking – Empathize Stage) | Practice Questions

Name: _____	Section: _____	Roll No.: _____
-------------	----------------	-----------------

Section A: Multiple Choice Questions

Choose the most appropriate option.

1. An empathy map is mainly used in which stage of Design Thinking?
 - (a) Define
 - (b) Empathize
 - (c) Prototype
 - (d) Test
2. The main purpose of an empathy map is to:
 - (a) Build a working model of the solution
 - (b) Test the solution with users
 - (c) Gain a deeper insight into the user's needs and behaviour
 - (d) Generate as many ideas as possible
3. While observing Anakha, you notice that she reads laptop reviews online every evening. In which quadrant will you write this?
 - (a) Does
 - (b) Says
 - (c) Feels
 - (d) Thinks
4. Anakha wonders whether an expensive laptop is really worth the money, but she does not say this to anyone. This belongs to:
 - (a) Says
 - (b) Does
 - (c) Feels
 - (d) Thinks
5. Which statement correctly shows the difference between the SAYS and THINKS quadrants?
 - (a) Both record the user's emotions
 - (b) SAYS records what the user speaks aloud; THINKS records thoughts the user may not express
 - (c) SAYS records the user's actions; THINKS records the user's emotions
 - (d) There is no difference between the two
6. While creating an empathy map, observations can be written directly in the quadrants or added using:
 - (a) Sticky notes
 - (b) A dendrogram
 - (c) A scatter plot
 - (d) A prototype

7. Which of the following is NOT usually part of a user persona?
- (a) The user's lifestyle and interests
 - (b) The user's goals and needs
 - (c) The designer's own favourite solution
 - (d) The user's attitudes and values
8. Before creating an empathy map, a designer should:
- (a) Decide the final solution first
 - (b) Only use their own past experience
 - (c) Ask the users to create the empathy map themselves
 - (d) Set aside preconceived notions and gather facts by observing and interacting with users
9. In the handbook's subject-selection example, which two groups of students were interviewed to create the empathy map?
- (a) Students already in plus-two and students about to take admission
 - (b) Students of Class VI and Class VIII
 - (c) Only toppers of Class X
 - (d) Teachers and parents
10. An empathy map helps a designer understand a problem from the:
- (a) Programmer's point of view
 - (b) End-user's point of view
 - (c) Manufacturer's point of view
 - (d) Government's point of view

Section B: Fill in the Blanks

11. Through empathy, one can put oneself in other people's _____ and connect with how they feel.
12. A designer can understand the problem from the end-user's perspective by observation, interaction or _____.
13. The _____ quadrant of an empathy map shows the actions of the user.
14. The insights from the empathy map are used in the _____ stage to write the problem statement.
15. A persona can include details about a user's education, lifestyle, interests, _____, goals and needs.

Section C: True or False

Write True or False. Correct the false statements.

16. An empathy map is created after the prototype has been built.
17. What a user says and what a user thinks can be different.
18. The FEELS quadrant records the actions performed by the user.
19. An empathy map can represent a group of similar users, not just one person.
20. A designer should fill the empathy map with their own assumptions instead of talking to users.

Section D: Classify the Observations

21. Mr. Kapoor, a 68-year-old retired teacher, is learning to make payments using a UPI app. Classify each observation into the correct quadrant of the empathy map (Says / Thinks / Does / Feels).

#	Observation	Quadrant
(a)	He tells his grandson, "These payment apps are too complicated for me."	
(b)	He asks the shopkeeper to scan the QR code for him.	
(c)	He becomes anxious every time he has to enter his UPI PIN.	
(d)	He privately believes that online payments are not safe.	
(e)	He always carries cash as a backup when he goes out.	
(f)	He feels proud when he completes a payment on his own.	
(g)	He says, "I wish the buttons and text on the screen were bigger."	
(h)	He wonders whether he could lose his savings by pressing the wrong button.	

Section E: Short Answer Questions (2 marks each)

22. Why is empathy considered the starting point of Design Thinking?
23. Differentiate between the THINKS and FEELS quadrants with one example of each.
24. How does an empathy map help in the Define stage of Design Thinking?
25. List the steps you would follow to create an empathy map for a user.
26. Why should a designer avoid preconceived notions while empathising with users?

Section F: Create an Empathy Map (4 marks each)

Draw an empathy map with at least two points in each quadrant. Then write one unmet need of the user.

27. Priya, a Class XI student, travels 1½ hours each way by school bus every day. She gets very little time for self-study and is worried about her marks.
28. Raju sells vegetables on a cart in a busy market. In the summer, many of his leafy vegetables wilt and rot by evening, and he has to sell them at a loss or throw them away.

Section G: Case-Based Question (5 marks)

29. Read the interview notes and answer the questions that follow.

A student team interviewed Mrs. Sharma, a working mother of two, about planning daily meals. Notes: She said, "I never know what to cook after a long day at work." She often orders food online on weekdays. She thinks home-cooked food is healthier, but believes she has no time for it. She checks the fridge several times before deciding on a dish. She feels guilty when her children eat junk food and feels tired by the end of the day. She also said, "I want something quick, healthy and that my kids will like."

- (a) Create an empathy map for Mrs. Sharma using the interview notes. (2)
- (b) Identify one point in the notes where what she says and what she does do not match. (1)
- (c) What is Mrs. Sharma's main unmet need? (1)
- (d) Suggest one AI-based solution idea that the team could explore in the Ideate stage. (1)

Section H: Long Answer Question (4 marks)

30. With the help of the subject-selection example in your handbook, explain how a team creates an empathy map while preparing a Capstone Project abstract. Mention who is interviewed, how the points are organised, and how the map is used afterwards.

ANSWER KEY / SAMPLE ANSWERS

Section A: MCQ

Q	1	2	3	4	5	6	7	8	9	10
Ans	(b)	(c)	(a)	(d)	(b)	(a)	(c)	(d)	(a)	(b)

Section B: Fill in the Blanks

11. shoes 12. imagination 13. DOES 14. Define 15. values

Section C: True or False

16. False – An empathy map is created in the Empathize stage, the first stage, before any prototype.
17. True
18. False – FEELS records the user's emotional state; the DOES quadrant records actions.
19. True – a persona can be a general representation of one or more users.
20. False – The designer must set aside assumptions and gather facts by observing and interacting with users.

Section D: Classify the Observations

21. (a) Says (b) Does (c) Feels (d) Thinks (e) Does (f) Feels (g) Says (h) Thinks

Section E: Short Answers (key points)

22. Design Thinking is human-centred. Empathy helps the designer understand the real problem, needs and feelings of users from their point of view. Without it, the solution may solve the wrong problem.
23. THINKS – thoughts and beliefs the user may not say aloud (e.g., "Is this laptop worth the price?"). FEELS – the user's emotions (e.g., anxious, excited, frustrated).
24. The points in the empathy map show the user's real needs and pain points. These insights help answer the 5W1H questions and write a clear, human-centred problem statement.
25. (1) Identify the user and observe/interview them. (2) Draw a 2 × 2 grid labelled Says, Thinks, Does, Feels. (3) Write observations or put sticky notes in the correct quadrants. (4) Review the map to identify the user's needs and insights.
26. Preconceived notions can make the designer see the problem only from their own view. Keeping an open mind lets them understand the user's real situation and needs, which leads to a better solution.

Section F: Sample Empathy Maps (accept any relevant points)

27. Priya

SAYS	THINKS
"I don't get time to revise." "The bus ride is so long and tiring."	- My marks will drop if this continues. - Can I use the travel time to study?
DOES	FEELS
- Sleeps or chats on the bus. - Studies late at night after reaching home.	- Tired and stressed. - Worried about exams.

Unmet need: a way to use travel time productively / manage study time better.

28. Raju

SAYS • "Half my spinach is wasted by evening." • "I can't afford a fridge for my cart."	THINKS • How much stock should I buy each day? • Customers will not buy wilted vegetables.
DOES • Sprinkles water on vegetables repeatedly. • Sells leftover stock at very low prices.	FEELS • Frustrated by the daily losses. • Anxious about his income.

Unmet need: keep vegetables fresh longer and buy the right quantity to reduce waste.

Section G: Case-Based

29. (a)

SAYS • "I never know what to cook after a long day at work." • "I want something quick, healthy and that my kids will like."	THINKS • Home-cooked food is healthier. • I have no time to cook properly.
DOES • Orders food online on weekdays. • Checks the fridge several times before deciding.	FEELS • Guilty when the children eat junk food. • Tired by the end of the day.

(b) She thinks home-cooked food is healthier and wants healthy meals, but she often orders food online on weekdays.

(c) Quick, healthy meal ideas that use what is available at home and that her children will enjoy.

(d) An AI meal-planner app or chatbot that suggests quick, healthy recipes from the ingredients in her fridge and learns the family's preferences. (Accept any relevant idea.)

Section H: Long Answer (key points)

30. • Users are students who have passed Class X and must choose subjects for plus-two (SDG-4, Quality Education).

• Two groups are interviewed: students already in plus-two (to learn how difficult choosing a subject and school was) and students about to take admission (to learn their anxieties and expectations).

• After the discussion, team members write each point on a bit of paper and classify it into SAYS, THINKS, DOES and FEELS to create the empathy map.

• The map is then used in the Define stage: the team answers the 5W1H questions and writes the problem statement, which leads to ideation (e.g., a chatbot that suggests subjects).