

**DESIGN THINKING
(CIV2105)**

Time Allotted : 2½ hrs

Full Marks : 60

Figures out of the right margin indicate full marks.

Candidates are required to answer Group A and any 4 (four) from Group B to E, taking one from each group.

Candidates are required to give answer in their own words as far as practicable.

Group – A

1. Answer any twelve:

12 × 1 = 12

Choose the correct alternative for the following

- (i) What is the first phase of the Design Thinking process?
(a) Ideation (b) Prototype (c) Empathize (d) Define
- (ii) The "**Ideation**" phase in Design Thinking focuses on
(a) Testing the product (b) Generating as many ideas as possible
(c) Building prototypes (d) Refining solutions
- (iii) Which method is commonly used during the "Empathize" phase?
(a) Interviewing users (b) Brainstorming
(c) Wireframing (d) Testing prototypes.
- (iv) The "Prototype" phase is best described as
(a) Finalizing the product
(b) Creating low-fidelity representations of ideas
(c) Developing the business model
(d) Writing the code.
- (v) The iterative nature of Design Thinking allows teams to
(a) Stick to the original plan
(b) Revisit and refine ideas based on feedback
(c) Avoid user feedback
(d) Skip certain phases.
- (vi) Which of the following tools is used to visualize ideas during the "Ideation" phase?
(a) Mind mapping (b) Personas
(c) User journey (d) Empathy map.
- (vii) Why is user feedback important in the Design Thinking process?
(a) It validates assumptions (b) It is optional
(c) It slows down the process (d) It is not necessary.

- (viii) During the "Testing" phase, teams should
 - (a) only test with internal team members
 - (b) focus on validating the final product
 - (c) gather user feedback to refine prototypes
 - (d) skip and move to production.
- (ix) What does IPR stand for?
 - (a) International Property Rights
 - (b) Intellectual Property Rights
 - (c) Internal Property Rights
 - (d) Industrial Property Rights.
- (x) What is the purpose of a patent?
 - (a) To protect artistic works
 - (b) To protect inventions and processes
 - (c) To protect brand names and logos
 - (d) To protect trade secrets.

Fill in the blanks with the correct word

- (xi) Design Thinking is a ____-centered approach to innovation and problem-solving.
- (xii) In the ____ phase, the team defines the problem statement based on insights gathered from users.
- (xiii) During the ____ phase, teams brainstorm and generate a wide range of creative solutions.
- (xiv) In the ____ phase, prototypes are tested with users to gather feedback and refine the solution.
- (xv) In Design Thinking, ____ thinking involves generating a wide range of possibilities without immediately judging them.

Group - B

- 2. (a) How will you define '**design**'? In what ways, conventional design is different from engineering design. [[CO1](Remember/LOCQ)]
 - (b) With neat sketches, demonstrate few examples of engineering design. [[CO1](Understand/LOCQ)]
- (3 + 6) + 3 = 12**
- 3. (a) Mention the various stages of '**Design Thinking**'. Explain them. [[CO2](Understand/LOCQ)]
 - (b) How does the empathy phase in design thinking contribute to uncovering latent user needs, and what methods can be employed to gather deep insights into user behaviors and motivations? [[CO2](Understand/LOCQ)]
- 6 + 6 = 12**

Group - C

- 4. (a) What do you mean by "**Human-Centred Design (HCD)**"? Explain the terminology in details. [[CO3](Remember/LOCQ)]

- (b) In what ways can design thinking be integrated into traditional problem-solving frameworks within organizations, and how does it enhance the innovation process compared to conventional approaches? [[CO3](Understand/LOCQ)]
6 + 6 = 12
5. (a) What are the various steps to enhance creative thinking? [[CO4](Understand/LOCQ)]
 (b) What are the barriers to creative thinking? [[CO4](Understand/LOCQ)]
5 + 7 = 12

Group - D

6. Explain various types of prototyping. [[CO4](Understand/LOCQ)]
12
7. Discuss the challenges of scaling design thinking within large organizations. How can companies ensure that design thinking principles are consistently applied across different departments and teams? [[CO4](Analyze/IOCQ)]
12

Group - E

8. Explain what is patent. What kind of protection does a patent offer? [[CO5](Remember/LOCQ)]
12
9. First carefully read the problem statement.
 You are part of a start-up focused on developing a new wearable device that combines advanced health monitoring features with a unique aesthetic design. Your goal is to bring a product to market that not only addresses a significant health issue but also stands out in a highly competitive market due to its innovative design.
 How can you leverage patents and design thinking to develop and protect your wearable device, ensuring it is both functionally innovative and aesthetically appealing while maintaining a competitive edge in the market? [[CO5),(CO6)(Apply/IOCQ)]
12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	75	25	0

