

**SEMESTER END AND BACKLOG SUBJECT
EXAMINATIONS - SEPTEMBER / OCTOBER 2023**

Program	: B.E. - Common to all Programs	Semester	: I / II
Course Name	: Design Thinking	Max. Marks	: 100
Course Code	: AECC17 / AECC27	Duration	: 3 Hrs

Instructions to the Candidates:

- Answer one full question from each unit.

UNIT - I

- Why is the term phase preferred over stage while describing different design thinking processes? CO1 (08)
 - Explain how design thinking is used in business? Mention any relevant case study. CO1 (08)
 - How does radical collaboration help? CO1 (04)
- Define mindset. Name the six key design thinking mindsets. CO1 (08)
 - Why is design thinking required in STEM education? How can it be nurtured? CO1 (08)
 - What is design thinking? How does a good designer arrive at the solution? CO1 (04)

UNIT - II

- Design a strategy if as a business you fail in prototype stage, what step you would take afterwards. CO2 (10)
 - What are the strategies one need to consider before stepping into empathy interview? CO2 (04)
 - Discuss how to create interview opportunities. CO2 (06)
- Elaborate on "The act of submerging oneself into a user's experience" with suitable example. CO2 (05)
 - Explain the significance of Empathy Map. CO2 (10)
 - What is the significance of the question "How might we"? CO2 (05)

UNIT - III

- Explain ideate phase. CO3 (05)
 - You are asked to redesign an umbrella. Sketch two models of umbrella using design thinking approach. List the various empathy component that you have included in the design. CO3 (10)
 - Explain "building on ideas" in ideate phase. CO3 (05)
- Explain Chi's three rules of prototyping. CO3 (05)
 - Explain various stages in prototyping. CO3 (05)
 - You are asked to modify a coffee mug. Sketch two models of mug using design thinking approach and mention the empathy that you have included in the model. CO3 (10)

UNIT- IV

7. a) Explain the importance of testing in design thinking. CO4 (07)
b) Criticize different type of testing. CO4 (07)
c) List the various types of test you can conduct on a pen that you have designed. CO4 (06)
8. a) Explain and sketch different phases in life cycle of a product. CO4 (07)
b) Explain FAST diagram. Draw a typical FAST diagram. CO4 (07)
c) For the following given problem identify the function and general solution. Justify the solution by the concept of value engineering. CO4 (06)
i) Problem 1 - Reduce the number of guards by combining entrances to strategic areas.
ii) Problem 2 - Reduce the travel time in your city during peak hours

UNIT - V

9. a) Why is 'changing the scope' of the project an important design tool? CO5 (10)
When does one change the scope and what does it indicate? Explain using subsidized meals for elderly at Good kitchen as a case study.
b) Explain how data driven design is the future of designing considering the individualization and customization possible. CO5 (10)
10. a) Explain the design principles: (i) Ethnography Isn't Only for Customers, CO5 (10)
(ii) The Power of Play using the Customer Contact Center at Toyota as a case study.
b) What are the different mechanisms built in futuristic farms to ensure higher efficiency? CO5 (10)
