



# Faculty of Engineering

## End Semester Examination May 2025

### OE00083 Value Creation Through Design Thinking

<b>Programme</b>	: B.Tech.	<b>Branch/Specialisation</b>	: All
<b>Duration</b>	: 3 hours	<b>Maximum Marks</b>	: 60

**Note:** All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.

#### Section 1 (Answer all question(s))

Marks CO BL

- Q1.** As an entrepreneur, which design thinking value will you use to understand the customer's problem better? 1    1    2

Rubric	Marks
Empathy	1

- ☐ Imagination                      ☐ Intuition  
☒ Empathy                              ☐ Curiosity

- Q2.** Design thinking typically helps in- 1    1    2

Rubric	Marks
Innovation	1

- ☒ Innovation                              ☐ Data analytics  
☐ Financial planning                      ☐ Operational efficiency

- Q3.** A method of linking different ideas together by finding commonalities between them- 1    2    2

Rubric	Marks
Brainstorming web	1

- ☒ Brainstorming web                      ☐ Free association  
☐ Future process                              ☐ Free writing

- Q4.** What is the way to narrow down the thoughts to reach at the final solution? 1    2    2

Rubric	Marks
Convergent thinking	1

- ☒ Convergent thinking                      ☐ Divergent thinking  
☐ Both of them                              ☐ None of these

- Q5.** What happens in the test stage of design thinking? 1    3    2

Rubric	Marks
You allow consumers to test a product or service.	1

- ☐ You conduct a written test of your design team                      ☒ You allow consumers to test a product or service  
☐ You engage in internal testing with employees                      ☐ You test products designed by competitors

**Q6.** What is the primary purpose of prototyping in design thinking?

1 3 2

Rubric	Marks
To test and refine ideas through iterative feedback	1

- ☐ To finalize the product design
 ☒ To test and refine ideas through iterative feedback
 ☐ To manufacture the final product
 ☐ To eliminate all possible failures before user testing

**Q7.** Which of the following are examples of refining a business model as different from pivoting?

1 4 2

Rubric	Marks
A brick-and-mortar retailer of children's shoes starts selling shoes online.	1

- ☒ A brick-and-mortar retailer of children's shoes starts selling shoes online.
 ☐ An online gaming company changes to become a platform for selling pre-owned cars.
 ☐ A retailer of ice creams starts making its own brand of natural ice creams.
 ☐ None of these

**Q8.** Jonah opened an organic vegetable store. But hardly any customers came. That was because very few people were aware of the store. Which block of the Lean Canvas can help Jonah make potential customers aware of her product?

1 4 2

Rubric	Marks
Channels	1

- ☐ Unfair Advantage
 ☐ Unique Value Proposition
 ☒ Channels
 ☐ Customer Segment

**Q9.** Which of the following is stage of product life cycle?

1 5 2

Rubric	Marks
All of these	1

- ☐ Introduction stage
 ☐ Growth stage
 ☐ Decline stage
 ☒ All of these

**Q10.** Which thing will make the project more attractive while evaluating a new development project using net present value analysis?

1 5 2

Rubric	Marks
Continuous improvements	1

- ☐ Market penetration
 ☐ Sequential product development
 ☐ Idea generation
 ☒ Continuous improvements

## Section 2 (Answer all question(s))

Marks CO BL

**Q11.** What is design thinking? Explain in brief with example.

4 1 2

Rubric	Marks
Definition	2
Explanation with example	2

**Q12. (a)** What is the five Stanford's process of design thinking? Explain any two with suitable example.

6 1 2

Rubric	Marks
Name of the five Stanford's process of design thinking	2
Explanation of any two with suitable examples.	4

(OR)

**(b)** What are customer needs? Why is it important to identify customer needs?

Rubric	Marks
Brief explanation of customer need	3
Importance of Customer needs.	3

### Section 3 (Answer all question(s))

Marks CO BL

**Q13.** Why is brainstorming a good way to generate new ideas?

4 2 3

Rubric	Marks
Brief explanation	4

**Q14. (a)** What is brainstorming and its steps? How does brainstorming assist in ensuring better decision making?

6 2 3

Rubric	Marks
Brainstorming & its steps	3
Brief explanation	3

(OR)

**(b)** How to translate 'customer needs' into 'product features' in six simple steps?

Rubric	Marks
write the six steps	6

### Section 4 (Answer all question(s))

Marks CO BL

**Q15.** What is the difference between minimum lovable product and minimum viable product?

4 3 2

Rubric	Marks
Four differences	4

**Q16. (a)** How do you explain a prototype? Explain any four benefits of prototyping.

6 3 2

Rubric	Marks
Briefly explain the prototype	2
Four Benefits of Prototyping	4

(OR)

**(b)** How you develop Minimum Viable Product (MVP)? Explain with relevant example.

Rubric	Marks
Brief explanation of Minimum Viable Product (MVP) with relevant example	6

### Section 5 (Answer all question(s))

Marks CO BL

**Q17.** What do you mean by unique value proposition and key metrics?

4 1 2

Rubric	Marks
Definition of Unique Value Proposition and Key Metrics	4

**Q18. (a)** What are the different types of business models? Explain any two with suitable example.

6 2 2

Rubric	Marks
Types of business models	2
Brief explanation of any two with suitable examples.	4

(OR)

**(b)** How to build a Lean Canvas step by step. Explain with example.

Rubric	Marks
Briefly explain the Lean Canvas by their steps.	4
Give the suitable examples	2

**Section 6 (Answer any 2 question(s))**

Marks CO BL

**Q19.** What is design for the environment? Explain in brief.

5 3 2

Rubric	Marks
Briefly explain the design for the environment.	5

**Q20.** What are the five stages of product development? Explain briefly with suitable example.

5 2 2

Rubric	Marks
Five stages of product development with suitable examples.	5

**Q21.** What are the various methods of sustainable design for the environment? Explain briefly with suitable example.

5 3 2

Rubric	Marks
Briefly explain any five methods with suitable examples.	5

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