

SREENIVASA INSTITUTE OF TECHNOLOGY AND MANAGEMENT STUDIES
(AUTONOMOUS)
Murukambattu, Chittoor

AIML DEPARTMENT



QUESTION BANK

For

23ESC241-DESIGN THINKING AND INNOVATION

Regulation –R23

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**UNIT - I INTRODUCTION TO DESIGN THINKING**

Introduction to elements and principles of Design, basics of design-dot, line, shape, form as fundamental design components. Principles of design. Introduction to design thinking, history of Design Thinking, New materials in Industry.

PART-A

Q.No.	Questions	Blooms Taxonomy Level
1	Explain the concept of design thinking and discuss its importance in solving real-world problems.	Remembering
2	Describe the elements and principles of design with suitable examples.	Remembering
3	Explain the basic design components such as dot, line, shape, form, and space.	Remembering
4	Discuss the principles of design and their role in effective product creation.	Remembering
5	Explain the history and evolution of design thinking.	Remembering
6	Describe the fundamental concepts of design used in engineering and product development.	Understanding
7	Explain how new materials in industry influence modern design thinking.	Remembering
8	Discuss the importance of design thinking in engineering education.	Remembering
9	Differentiate between traditional problem-solving approaches and design thinking.	Understanding
10	Explain the role of design thinking in innovation and creativity.	Remembering

2MARK QUESTIONS

1	What is Design Thinking?	Understanding
2	Define Design.	Understanding
3	List any two elements of design.	Understanding
4	What are the principles of design?	Understanding
5	Define form in design	Understanding
6	What is meant by innovation in design?	Understanding
7	What is the role of new materials in design?	Understanding
8	Define creativity	Understanding
9.	State the importance of design thinking.	Remembering
10	Mention any two applications of design thinking.	

UNIT - II DESIGN THINKING PROCESS

Design thinking process (empathize, analyze, idea & prototype), implementing the process in driving inventions, design thinking in social innovations. Tools of design thinking customer, journey map, brainstorming, product development

PART-A

1	Explain the design thinking process stages: Empathize, Analyze, Ideate, Prototype, and Test.	Understanding
2	Discuss the importance of empathy in the design thinking process with examples.	Remembering
3	Explain the role of brainstorming in idea generation.	Understanding
4	Describe personas and customer journey maps and their importance in design thinking.	Remembering



5	Explain how design thinking is applied in social innovations.	Understanding
6	Discuss the process of prototyping and its significance in product development.	Understanding
7	Explain how design thinking helps in driving inventions.	Remembering
8	Describe the tools used in design thinking for problem identification and solution design.	Remembering
9	Explain the implementation of design thinking in product development.	Remembering
10	Draw and explain a flow chart representing the design thinking process.	Remembering
PART-B		
1	List the stages of the design thinking process.	Understanding
2	What is meant by empathy in design thinking?	Applying
3	Define brainstorming	Understanding
4	What is a prototype?	Applying
5	What is ideation?	Understanding
6	Define personas	Understanding
7	What is a customer journey map?	Applying
8	Mention any two tools used in design thinking	Understanding
9	What is social innovation	Understanding
10-	What is the purpose of testing in design thinking?	
UNIT - III INNOVATION		
Art of innovation, Difference between innovation and creativity, role of creativity and innovation in organizations- Creativity to Innovation- Teams for innovation- Measuring the impact and value		
PART-A		
1	Define innovation and explain the art of innovation with examples.	Understanding
2	Differentiate between creativity and innovation with suitable real-time examples.	Understanding
3	Explain the role of creativity and innovation in organizations.	Understanding
4	Describe the process of transforming creativity into innovation.	Remembering
5	Discuss the importance of team collaboration for innovation.	Understanding
6	Explain the types of innovation practiced in modern organizations.	Understanding
7	Discuss the methods used to measure the impact and value of creativity.	Remembering
8	Explain the challenges faced during innovation implementation.	Remembering
9	Describe the flow and planning from idea generation to innovation.	Understanding
10	Explain the concept of value-based innovation with examples.	Remembering
PART-B		
1	Define innovation.	Applying
2	What is the difference between creativity and innovation?	Understanding
3	What is an innovative idea?	Applying
4	What is meant by art of innovation?	Understanding



5	Define organizational innovation.	Applying
6	What is value-based innovation?	Understanding
7	Mention any two types of innovation.	Understanding
8	What is team innovation?	Understanding
9	What is meant by measuring creativity?	Applying
10	State any two benefits of innovation.	Applying
UNIT - IV PRODUCT DESIGN		
Problem formation, introduction to product design, Product strategies, Product value, Product planning, product specifications- Innovation towards product design		
PART-A		
1	Explain the process of problem identification and formulation in product design.	Understanding
2	Describe the product design process in detail.	Remembering
3	Explain different product strategies with examples.	Remembering
4	Discuss the concept of product value and its importance.	Understanding
5	Explain product planning and product specifications.	Remembering
6	Describe the role of innovation in product design.	Remembering
7	Explain the importance of modeling in product design.	Understanding
8	Discuss how to set product specifications effectively.	Remembering
9	Explain the steps involved in developing a new product.	Remembering
10	Write a case study on an innovative product design, explaining its success.	Understanding
PART-B		
1	Define product design.	Understanding
2	What is problem identification?	Applying
3	What is meant by product strategy?	Applying
4	Define product value.	Understanding
5	What is product planning?	Analyzing
6	What are product specifications?	Understanding
7	What is meant by modeling in product design?	Understanding
8	Define innovation in product design.	Understanding
9	What is new product development?	Analyzing
10	State any two objectives of product design.	Understanding
UNIT - V DESIGN THINKING IN BUSINESS PROCESSES		
Design Thinking applied in Business & Strategic Innovation, Design Thinking principles that redefine Business Business challenges: Growth, Predictability, Change, Maintaining, Relevance, Extreme competition, Standardization. Design thinking to meet corporate needs- Design thinking for Startups- Defining and testing Business Models and Business Cases- Developing & testing prototypes.		
PART-A		
1	Explain how design thinking is applied in business and strategic innovation.	Remembering
2	Discuss the design thinking principles that redefine business processes.	Understanding
3	Explain major business challenges such as growth,	Understanding



	predictability, and relevance.	
4	Describe how design thinking helps organizations handle extreme competition and change.	Understanding
5	Explain the role of design thinking in startups.	Understanding
6	Discuss design thinking for developing and testing business models.	Understanding
7	Explain the application of design thinking to corporate needs and standardization.	Understanding
8	Describe the process of developing and testing prototypes for business ideas.	Remembering
9	Explain marketing strategies for a newly designed product.	Remembering
10	Discuss the importance of maintenance, reliability, and planning in startup success.	Remembering
PART-B		
1	What is design thinking in business ?	Understanding
2	Define strategic innovation .	Understanding
3	What is meant by a business challenge ?	Understanding
4	What is business relevance ?	Applying
5	Define startup .	Understanding
6	What is a business model ?	Understanding
7	What is prototyping in business ?	Understanding
8	Define market strategy .	Understanding
9	What is meant by reliability in business?	Understanding
10	State any two advantages of design thinking in startups .	Understanding