

**Question Bank /Topic Learning Outcomes**

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| **Course Details** | | | | | |
| **Class: II Year, B. Tech Semester: II Academic Year: 2024-25**  **Course Title:DESIGN THINKING & INNOVATION Course Code: 23A99401 Credits:** 3  **Program/Dept.: Common for all Branches Batch: 2023-2027**  **Regulation: R-23**  **Faculty: Dr B Sunil kumar/M.Santhi/R Ashok Reddy** | | | | | |
| **Module No:** | **Q. No** | **Topic Learning Outcomes/ Question Bank/ MCQ/ Lab Experiments/ Tutorial Task**  **Labels to the right indicate: CO=Course Outcome, BL=BLOOMS level.**  **On completion of the Lecture/ Tutorial/ Lab on a topic, students must be able to:** | **CO** | **BL** | **Marks per Q** |
|  |  | **Module-1**  **Introduction to Design Thinking** |  |  |  |
| 1 | 1 | Describe the stages of Design thinking. | 1 | 1 | 10 |
| 1 | 2a) | What is a design thinking. Illustrate its applications. | 1 | 1 | 5 |
| 1 | 2b) | Briefly explain the process of design thinking. | 1 | 1 | 5 |
| 1 | 3 | Discuss the principles of design thinking. | 1 | 1 | 10 |
| 1 | 4a) | Differentiate design, Engineering design and Design thinking. | 1 | 2 | 4 |
| 1 | 4b) | What is meant by human centered design and elaborate with  any two examples. | 1 | 1 | 6 |
| 1 | 5 | Describe the 5 stage Stanford process model in detail. | 1 | 1 | 10 |
| 1 | 6 | List any four ideation methods and explain. | 1 | 1 | 10 |
| 1 | 7a) | Illustrate the benefits of Design thinking. | 1 | 1 | 5 |
| 1 | 7b) b) | Discuss the features of Design thinking. | 1 | 1 | 5 |
| 1 | 8a) | Elaborate the fundamental elements of design—dot, line, shape, and form. | 1 | 1 | 5 |
| 1 | 8b) b) | Define design thinking. Explain its historical development. | 1 | 1 | 5 |
|  |  | **Module-2**  **Design Thinking Process**  **Introduction to Design Thinking** |  |  |  |
| 2 | 1 | Summarize the ten tools of design thinking. | 2 | 2 | 10 |
| 2 | 2 | Define Empathy in design thinking and discuss its tools o.empathy. | 2 | 1 | 10 |
| 2 | 3 | Classify the different techniques in brain storming and how problems are solved by this. | 2 | 2 | 10 |
| 2 | 4 | Define Empathy map and its use in design thinking. Discuss the process of empathy map. | 2 | 1 | 10 |
| 2 | 5 | Define Brainstorming? Explain its principles and rules. | 2 | 1 | 10 |
| 2 | 6a) | What is meant by prototype in design thinking? | 2 | 2 | 5 |
|  | b) | Differentiate low-fidelity and high-fidelity prototypes. | 2 | 2 | 5 |
| 2 | 7a) | Extract the process of design thinking in driving inventions. | 2 | 2 | 5 |
| 2 | b) | Design thinking in social innovations. | 2 | 2 | 5 |
| 2 | 8 | Draw and explain the flow diagram to represent the design thinking process for a specific problem. | 2 | 1 | 10 |
|  |  | **Module-3**  **Innovation** |  |  |  |
| 3 | 1 | Define the art of innovation and explain how it goes beyond just generating new ideas | 3 | 1 |  |
| 3 | 2 | Compare creativity and innovation with examples. | 3 | 2 |  |
| 3 | 3 | Discuss the role of leadership, organizational culture, and resource allocation in fostering a creative and innovative workplace. | 3 | 1 |  |
| 3 | 4 | a)Explain the role of creativity and innovation in organizational success. | 3 | 1 |  |
| 3 |  | b)Describe how can organizations transform creative ideas into successful innovations. | 3 | 1 |  |
| 3 | 5 | What is value-based innovation. Provide examples of value-driven innovations. | 3 | 1 |  |
| 3 | 6 | a)What are the characteristics of high-performing innovation teams? | 3 | 1 |  |
| 3 |  | b)How can organizations measure the success of innovation teams? | 3 | 1 |  |
| 3 | 7 | Explain the step-by-step process of transforming an initial idea into a successful innovation. | 3 | 1 |  |
| 3 | 8 | Evaluate the relationship between value-based innovation and organizational success. | 3 |  |  |
|  |  | **Module-4**  **Product Design** |  |  |  |
| 4 | 1 | Explain the process of problem formation in product design | 4 | 2 | 10 |
| 4 | 2 | Discuss the role of product design in the innovation process | 4 | 2 | 10 |
| 4 | 3 | Describe different product strategies that companies can adopt to achieve competitive. | 4 | 2 | 10 |
| 4 | 4 | Differentiate product innovation and process innovation. | 4 | 2 | 10 |
| 4 | 5 | Discuss the stages of product planning with examples. | 4 | 2 | 10 |
| 4 | 6 | Discuss the importance of setting clear and measurable specifications to ensure product quality and user satisfaction. | 4 | 2 | 10 |
| 4 | 7 | Discuss the role of innovation in product design.  Give examples of innovative products and the strategies behind their success. | 4 | 2 | 10 |
| 4 | 8 | Discuss the importance of modeling in product design | 4 | 2 | 10 |
|  |  | **Module-5**  **Product Design** |  |  |  |
| 5 | 1 | Explain how design thinking redefines business processes with examples. | 5 | 2 | 10 |
| 5 | 2 | Discuss how startups can initiate design thinking for success | 5 | 2 | 10 |
| 5 | 3 | Analyze the challenges businesses face and how design thinking addresses them | 5 | 2 | 10 |
| 5 | 4 | Outline the process of developing and testing business prototypes. | 5 | 2 | 10 |
| 5 | 5 | Discuss the major business challenges that organizations face today. | 5 | 2 | 10 |
| 5 | 6 | How can design thinking be applied to different industries challenges and business sectors. | 5 | 2 | 10 |
| 5 | 7 | Explain Business process modeling in detail | 5 | 2 | 10 |
| 5 | 8 | Develop a comprehensive marketing strategy for a startup applying Design Thinking. | 5 | 2 | 10 |

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