Name: .....
Roll No: .....

MAR ATHANASIUS COLLEGE OF ENGINEERING
(AUTONOMOUS), KOTHAMANGALAM - 686666

B.TECH SERIES EXAMINATION, NOVEMBER 2025 (S1CS, DS, AIML, CE, ECE, EEE, ME)

COMMON TO ALL BRANCHES
B24MC1T02 DESIGN THINKING

Max.Marks:40 Duration:1.5 Hours

PARTA

Answer all questions. Each question carries 3 marks.

1. How does brainstorming help in the generation of innovative concepts? (CO1)
2. Differentiate between customer needs and customer requirements. (CO2)
3. Identify the essential skills needed to perform a market analysis for a new product. (CO2)
4. What are the testing methods for prototypes? (CO3)

PARTB

Answer all questions. Each question carries 14 marks.

5. (a) Describe the various stages of the design thinking process, along with their significance and the techniques used in each stage, with suitable examples. (CO1) (10 marks)

   (b) Discuss the concepts of convergent and divergent thinking with an example. (CO1) (4 marks)

6. (a) Explain the role of conceptualization in the product design process. How does it influence the development of a product? (CO2) (7 marks)

   (b) Describe how Pugh's Matrix is used for evaluating and selecting the best design concept to launch a new eco-friendly water bottle. (CO3) (7 marks)

Vision

Mentoring to Ensure Excellence

Mission

1. To facilitate comprehensive and integrated development of students by providing quality education that encourages sustainable practices.
2. To mould disciplined and socially committed engineers capable of assuming professional leadership, upholding national integrity.