

Register No.: Name:

SAINTGITS COLLEGE OF ENGINEERING (AUTONOMOUS)

(AFFILIATED TO APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY, THIRUVANANTHAPURAM)

FOURTH SEMESTER B.TECH DEGREE EXAMINATION (S), SEPT 2022**COMMON TO CH,CE,FT,ME
(2020 SCHEME)****Course Code: 20EST200****Course Name: Design and Engineering****Max. Marks: 100****Duration: 3 Hours****PART A***(Answer all questions. Each question carries 3 marks)*

1. What are the basic steps adapted in a design process?
2. Explain the terms client, user and designer in a design process.
3. Explain divergent questioning in design thinking.
4. List out the steps in iterative design thinking process.
5. What are the guidelines that shall be followed for a technical communication?
6. Differentiate between a prototype and a model.
7. Pick out the differences between problem based and project based learning.
8. Explain modular approach in design.
9. What are the different types of costs involved in the design of a product?
10. What do you mean by design rights?

PART B*(Answer one full question from each module, each question carries 14marks)***MODULE I**

11. Explain the design process through designing a school bag for children. Use hand sketches to support your idea (14)

OR

12. Design a washing machine describing the concept of design alternatives with the help of neat sketches. (14)

MODULE II

13. Explain the iterative steps in design thinking process through the design of a wheel chair for paraplegic persons. (14)

OR

14. Illustrate the convergent divergent thinking approach through the design of an electric bulb with the aid of hand sketches. (14)

MODULE III

15. With the help of sketches with design detailing, material selection, scale drawings and dimensions show the design of a coffee mug. (14)

OR

16. Prepare a technical report for a newly designed office chair with neat sketches for presenting to a client. (14)

MODULE IV

17. Considering the aesthetics and ergonomics aspects design a remote control for a television. Justify the changes using hand sketches and explanations. (14)

OR

18. Demonstrate modular design approach for designing of a table lamp. (14)

MODULE V

19. Design for production, use, and sustainability of a table fan. Draw hand sketches and provide reasonings for the design's different elements. (14)

OR

20. Describe the how to estimate the cost of a table in design stage? Show how economics will influence the engineering designs (14)
