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GOVT. COLLEGE OF ENGINEERING KANNUR

Department of Electronics and Communication Engineering

Third Semester Second Series Examination December 2022 (2019 Scheme)

EST 200 Design and Engineering

Max. Marks: 50 Duration: 1.5 Hours

PART A

Answer all questions. Each question Carries 3 marks

1. Explain the significance of "Feedback capture matrix" in design-thinking [CO2] (3)
2. Distinguish between layout drawings and detail drawings in the context of design-communication [CO1] (3)
3. Explain any three factors which are to be considered in technical communication of a design [CO1] (3)
4. Explain Modular design. Mention any two advantages of the same [CO1] (3)
5. Explain the importance of project-based learning in design engineering [CO1] (3)

PART B

Answer One full question from each Group

GROUP 1

6. Illustrate the design thinking process for designing a walking stick for elderly people. Use hand sketches for illustration [CO2, CO3] (14)

OR

7. Design a water bottle that can be opened with just one hand. Illustrate the various stages involved in design thinking. Sketch the final design [CO2, CO3] (14)

GROUP 2

8. Design a foldable steel table. Draw the detailed 2D drawings of the same with design detailing, scale drawings and dimensions. Use only hand sketches. [CO3] (14)

OR

9. Prepare a technical report for a newly designed website for online training of students, with neat diagrams for presenting to a client [CO3] (14)

PTO

GROUP 3

10. Show how mathematics and physics play a role in designing a lifting mechanism to raise 100 kg of weight to a floor at a height of 10 meters in a construction site [CO1, CO3] (7)

OR

11. Describe the role of mathematical modelling in engineering design citing a suitable example [CO1, CO3] (7)

Course Outcomes (COs)

CO Number	Description	Questions
EST 200.CO1	Explain the different concepts and principles involved in design engineering	2, 3, 4, 5,10,11
EST 200.CO2	Apply design thinking while learning and practicing engineering	1, 6, 7
EST 200.CO3	Develop innovative, reliable, sustainable and economically viable designs incorporating knowledge in engineering	6, 7, 8, 9, 10, 11