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10MA835

**Eighth Semester B.E. Degree Examination, Jan./Feb.2021**  
**Engineering System Design**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting at least TWO questions from each part.**

**PART – A**

- 1 a. What is system design? Explain the design process. (10 Marks)  
b. With a flow chart, explain the design 'morphology'. (10 Marks)
- 2 a. Explain with a flow chart the process of design formulated on the basis of curiosity and the need. (10 Marks)  
b. Explain how need analysis is carried out. What is the role of specification in need analysis? (10 Marks)
- 3 a. Explain the following with an example: i) Creative attitude ii) Creative process. (10 Marks)  
b. Briefly discuss the following: i) Mental fixity ii) Creativity by analogy with prior systems. (10 Marks)
- 4 a. Write a note on synectics. (08 Marks)  
b. Explain the steps involved in morphological analysis. (06 Marks)  
c. Explain Analysis of Inter Connected Decision Areas (AIDA). (06 Marks)

**PART – B**

- 5 a. What do you understand by "physical realizability"? How it helps in embarking on the most feasible solution to a given design problem. (10 Marks)  
b. Write notes on:  
i) Quality of design  
ii) Economics in design  
iii) Concept of utility (10 Marks)
- 6 Explain any four of the following  
a. Design for production  
b. Design for shipping, handling and installing  
c. Design of use  
d. Design for maintenance  
e. Detailed design. (20 Marks)
- 7 a. Explain the reliability of assembled system:  
i) Series ii) Parallel iii) Combined system (10 Marks)  
b. Write note on: i) Break even analysis ii) Bath tub curve (10 Marks)
- 8 a. List the factors determining the communication from machine to man. Cost the factors that control the choice of the display. (10 Marks)  
b. With a suitable sketch and example, explain Man-Machine interaction cycle. (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.