MECHANICAL SYSTEM DESIGN (EME-043)

Unit 1

1. What is system approach
2. Give the basic aspects of concurrent engineering. How it helps in product design and development
3. What are the attributes of the system
4. Why is system approach becoming popular in engineering problems
5. What is meant by system. Explain the following terms in context of system; input, output, environment and boundaries
6. What do you understanding by entities, attributes and activity of the system
7. Why it is important to analyse need statement
8. How the initial statement of need might originated
9. What is need
10. Explain system design, where environment and safety are prime considerations

Unit 2

1. What is mathematical modeling of real situation
2. What is need for modeling and what is the purpose of modeling
3. Write in brief iconic, analogy and mathematical modeling
4. Describe the steps involved in modeling in mechanical system
5. Explain what is meant by the system analyse
6. Define black box approach and state theory approach
7. Explain the decision approach for system analysis
8. Discuss the origin of system analysis concept
9. What do you understand by component integration

Unit 3

1. What do you understand by network flow problem
2. Discus the graphical model in system design
3. What do you understand by shortest path problem
4. What are the benefits of planning projects by network analysis
5. What is optimization process
6. What is the meaning of goal, objective, motivation and freedom of choice
7. What is the analytical method of optimization
8. What is the combinational optimization
9. What is the subjective optimization

Unit 4

1. Discuss the elements of feasibility analysis
2. What is meant by time value of money
3. What is meant by planning horizon
4. Explain the various factors which are considered while feasibility analysis of the system

Unit 5

1. What do you understand by utility value
2. Mention the steps in decision making process
3. What is EMV? How it is computed to be used as a criterion of decision making
4. What do you know about decision making under risk
5. Explain in brief the importance of decision making
6. What is simulation
7. What are simulation models
8. Explain iconic and analog model with suitable examples
9. Describe the major activities in a simulation process
10. What is Computer simulation
11. Mention the limitations of simulation approach
12. Explain the term open loop, closed loop and automated system