

Try all questions

Note: You can give examples but don't solve any of them numerically

- 1- Discuss in details the phases of operations research study.

- 3- Supply chain activities can be grouped into strategic, tactical, and operational levels of activities (explain).
- 4- Explain the following problems :
 - (a) The minimal spanning tree problem.
 - (b) The travelling salesman problem.
 - (c) The knapsack problem.
 - (d) The fixed charge problem.
 - (e) The shortest route problem.
 - (f) The convex programming problem.

- 5- Explain in details one of the metaheuristic algorithms.

- 6- A calculator company produces a scientific calculator and a graphing calculator. An expected demand of at least 100 scientific and 80 graphing calculators each day. Because of limitations on production capacity, no more than 200 scientific and 170 graphing calculators can be made daily. To satisfy a shipping contract, a total of at least 200 calculators must be shipped each day. If each scientific calculator sold results in a \$2 loss, but each graphing calculator results in a \$5 profit, show graphically how many of each type should be made daily to maximize net profits?

- 7- Explain the difference between the sensitivity analysis, the postoptimality analysis and the parametric analysis.

- 8- A new author sets three criteria for selecting a publisher for an OR textbook: Royalty percentage, marketing and advanced payment. Two publishers have expressed interest in the book. Choose any method to rank the two publishers (assume any required data needed).

Good Luck