

SD COLLEGE HOSHIARPUR  
DEPARTMENT OF COMMERCE

B.COM(VI Sem)

Operational Research

Sr. no	Topic	Teaching points	Specific objectives	Methods, approaches and techniques	Resources and links
Unit I	Operational Research, Linear Programming, Transportation Problem, Assignment Problem.	Operational Research— Meaning, Significance and Scope. Introduction to Linear Programming, Formulation of Linear Programming— Problem, Graphical Method, Simplex Method. Duality in Linear Programming, Definition of Dual Problem, General Rules in Converting any Primal into its Dual,	To understand the concepts and techniques of Operations Research for business decision making and to acquire required skills to solve various problems in OR.	Research study, Action research, Examples, Recent developments in industry, Discussion, Lecture method, PPT's	Kapoor, V.K., Operations Research, Sultan Chand & Sons, New Delhi. Sharma, J. K., Operations Research, Theory and Applications, Macmillan India Ltd., ND. Kalyani Publishers. <a href="http://www.slideshare.net">www.slideshare.net</a> Industrial practical links.

		Transportation Problem, Assignment Problem.			
Unit II	Decision Theory, Replacement Problem, Games Theory and Simulation	Decision Theory: Decision Making under Uncertainty and Risk, Decision Trees. Replacement Problem (Individual and Group replacement Problems both). Games Theory : Two Persons Zero Sum Games, Pure Strategies, Mixed Strategies. Simulation; Meaning, Process, Advantages, Limitations and Applications.	To understand the concepts and techniques of Operations Research for business decision making and to acquire required skills to solve various problems in OR.	Research study, Action research, Examples, Recent developments in industry, Discussion, Lecture method, PPT's	Kapoor, V.K., Operations Research, Sultan Chand & Sons, New Delhi. Sharma, J. K., Operations Research, Theory and Applications, Macmillan India Ltd., ND. Kalyani Publishers. <a href="http://www.slideshare.net">www.slideshare.net</a> Industrial practical links.

Question Bank:

1. What are the steps involved in OR problems?
  2. What are the important techniques used in OR. Discuss limitations also.
  3. What do understand by optimum utilization of resources.
  4. Explain feasible solution, basic feasible solution, optimal solution, infeasible solution, objective function.
  5. Formulate the LPP problem and its computational procedure.
  6. Explain relationship between primal and dual.
  7. What is degeneracy? How it can be resolved in transportation problem?
  8. What is unbalanced assignment model? How it is solved by HAM?
  9. What is decision theory?
  10. What do you understand by decision tree analysis?
  11. Explain OR methodology of solving replacement problems.
  12. What is Game theory? What are its properties? Explain the assumptions.
  13. What is Simulation? Explain its process.
  14. What do understand by mixed strategy methods?
- Solve all numerical problems for better understanding.