

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

B.Com (Hons.) (Sem.-6)
OPERATION RESEARCH
Subject Code : BCOM-602-18
M.Code : 79471
Date of Examination : 03-01-23

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTIONS-B consists of FOUR Sub-sections : Units-I, II, III & IV.**
3. **Each Sub-section contains TWO questions each, carrying TEN marks each.**
4. **Student has to attempt any ONE question from each Sub-section.**

SECTION-A

1. Answer Briefly :
 - a) Hungarian Method
 - b) What is infeasible solution?
 - c) Significance of Operations Research
 - d) Degeneracy in Transportation Problem
 - e) Assumptions of LLP.
 - f) Slack and Float.
 - g) Pure and Mixed strategy games.
 - h) Probabilistic Model.
 - i) Limitations of Dominance method in game theory.
 - j) Define Activity and Event

SECTION-B

UNIT-I

- Discuss in detail the scope, objectives and limitations of Operations Research.
- Solve the following problem :

$$\text{Minimize } Z = 2x_1 + 3x_2$$

$$\text{Subject to : } x_1 + x_2 \leq 1$$

$$3x_1 + x_2 \leq 4,$$

$$x_1, x_2 \geq 0$$

UNIT-II

- Solve the following game, whose pay of matrix is :

		B		
		I	II	III
A	I	-2	15	-2
	II	-5	-6	-4
	III	-5	20	-8

- What do you understand by Decision Tree analysis? What is a node in a decision tree? What is backward pass?

UNIT – III

- What is the difference between PERT & CPM ? Discuss the merits and demerits of PERT.
- Explain characteristics and classification of Queuing Models.

UNIT-IV

- What is meant by Economic Ordered Quantity? Discuss its utility in Inventory Control.
- Find the cost per period of individual replacement policy of an installation of 300 bulbs, given the following :
 - Cost of individual replacement of bulb is Rs. 2/- per bulb.
 - Conditional probability of failure of bulbs is as follows :

Weekend :	0	1	2	3	4
Probability of Failure :	0	0.1	0.3	0.7	1.0

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.