

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>B</b>		
		<b>I</b>	<b>II</b>	<b>III</b>
<b>A</b>	<b>I</b>	-2	15	-2
	<b>II</b>	-5	-6	-4
	<b>III</b>	-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 :

<b>Weekend :</b>	0	1	2	3	4
<b>Probability of Failure :</b>	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.**