Roll No. | | | | | | | | | | | | | **Total No. of Pages : 03**

Total No. of Questions : 09

BBA (Sem–5)

OPERATION RESEARCH

Subject Code : BBA-501-18

M.Code : 78193

Date of Examination : 12-06-2023

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. Write briefly :

a) Discuss the limitations of Operation Research.

b) Discuss scope of Operation Research.

c) Explain the meaning of Linear Programming.

d) What do you mean by Optimality Test?

e) Define Term Travelling Salesman problem.

f) How does the sequencing technique help the manager?

g) Explain the terms Slack and float.

h) State the meaning of Critical Path.

i) Discuss the term Inventory.

j) What do you understand by Replacement problem?

SECTION-B

UNIT-I

2. List any three operation Research techniques and state in what conditions they can be used?

3. What are the types of problems that Linear Programming can help in solving?

UNIT-II

4. Describe the Assignment Problem giving a suitable example. Give two areas of its Applications.

5. Find the Initial Basic Feasible Solution to the following transportation problem by: North- West Corner Rule.

From \ To	2	7	4	Supply
	3	3	1	8
	5	4	7	**7**
Demand	1	6	2	14
	7	9	18	

UNIT-III

6. Seven jobs X, Y, Z, P, Q, R, S have arrived at one time to be processed on one machine. Find out the optimal job sequence when their operation time is given.

Jobs (n)	**Operation time in minutes**
X	12
Y	10
Z	9
P	7
Q	4
R	2
S	1

7. Explain PERT and its importance in network analysis. What are the requirements for applications of PERT techniques?

UNIT-IV

8. What is the necessity for Maintaining Inventory? Discuss the causes and problem of Poor Inventory Control?

9. Explain how the theory of replacement is used in the following problems:

   a) Replacement of items whose maintenance cost varies with time.

   b) Replacement of items that fail completely.

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.