BACHELOR OF BUSINESS ADMINISTRATION (CBCS - 2018 COURSE)
B.B.A. Sem-V : WINTER : 2021
SUBJECT: INTRODUCTION TO OPERATIONS RESEARCH

Day : Wednesday
Date : 02-02-2022

W-18857-2021

Time : 10:00 AM-01:00 PM
Max. Marks: 60

N.B.

1) Attempt any **THREE** questions from Section – I and any **TWO** questions from Section – II.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in the **SAME** answer book.
4) Use of non-programmable calculator is allowed.

SECTION – I

Q.1 What is Operations Research? Explain its scope with suitable examples. **(12)**

Q.2 Use the graphical method to solve the following LP problem. **(12)**

Minimize $Z = 3x_1 + 2x_2$

Subject to the constraints:

$$5x_1 + x_2 \geq 10$$
$$x_1 + x_2 \geq 6$$
$$x_1 + 4x_2 \geq 12$$

and $x_1, x_2 \geq 0$

Q.3 Find the Initial basic feasible solution for the following transportation problem by using: **(12)**

a) North west corner rule
b) Least cost method

	D_1	**D_2**	**D_3**	**D_4**	**Capacity**
S_1	19	30	50	10	7
S_2	70	30	40	60	9
S_3	40	8	70	20	18
Demand	5	8	7	14	34

Q.4 What is assignment problem? Discuss its applications. **(12)**

Q.5 Write short notes on any **THREE** of the following: **(12)**

a) PERT
b) Applications of transportation problem
c) Limitations of LPP
d) Advantages of Operations Research

P.T.O.

SECTION – II

Q.6 Draw a Network diagram for a small project assuming activities, description, duration and their interrelationship. Calculate critical path and project duration. **(12)**

Q.7 A computer centre has three expert programmers. The centre wants three application programmes to be developed. The head of the computer centre, after studying carefully the programmes to be developed, estimates the computer time in minutes required by the experts for the application programmes as follows: **(12)**

		Programmers		
		A	B	C
Programmes	1	120	100	80
	2	80	90	110
	3	110	140	120

Assign the programmers to the programmes in such a way that the total computer time is minimum.

Q.8 What do you mean by Linear Programming Problem (LPP)? Discuss applications of LPP. **(12)**

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