

**BACHELOR OF BUSINESS ADMINISTRATION (BUSINESS PROCESS
MANAGEMENT) (CBCS-2018 COURSE)**

B.B.A. (BPM) Sem-VI : : SUMMER - 2022

SUBJECT : INTRODUCTION TO OPERATIONS RESEARCH

Day : Monday
Date : 23-05-2022

S-20646-2022

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

N.B.

- 1) Attempt **ANY THREE** questions from Section – I.
- 2) Attempt **ANY TWO** questions from Section – II.
- 3) Figures to the **RIGHT** indicate **FULL** marks.
- 4) Answers to both the sections should be written in **SAME** answer book.
- 5) Use of Non- Programmable Calculator is allowed.

SECTION – I

Q.1 Define Operations Research. Explain the advantages of Operations Research in brief. (10)

Q.2 Solve the following L.P.P. by Graphical Method. (10)

Minimize $Z = 80x + 120y$

Subject to :

$$x + y \leq 9$$

$$x \geq 2$$

$$y \geq 3$$

$$20x + 50y \leq 300$$

$$x, y \geq 0$$

Q.3 Solve the following A.P. for Minimization. (10)

Contractor	Job			
	A	B	C	D
I	10	24	30	15
II	16	22	28	12
III	12	20	32	10
IV	9	26	34	16

Q.4 Find I.B.F.S. for the following T.P. by (10)

- i) N.W.C.R.
- ii) Least Cost Method

Plants	Warehouses				Availability
	I	II	III	IV	
X	25	17	25	14	300
Y	15	10	18	24	500
Z	16	20	8	13	600
Demand	300	300	500	500	

Q.5 Write short notes on **ANY TWO** of the following : (10)

- a) Origin and development of Operations Research
- b) Applications of Transportation Problem
- c) Importance of Network analysis

PTO

SECTION – II

Q.6 Find the optimum solution of following T.P. for Minimization. (15)

Furnaces	Mills					Capacity
	M1	M2	M3	M4	M5	
F1	4	2	3	2	6	8
F2	5	4	5	2	1	12
F3	6	5	4	7	3	14
Demand	4	4	6	8	8	

Q.7 a) Explain the advantages of Operations Research in brief. (07)

b) Hungarian method for solving assignment problem. (08)

Q.8 For the following project schedule (15)

Activity:	1-2	1-3	2-4	3-5	2-5	4-6	5-6
Duration in weeks:	10	17	15	11	17	13	15

Draw network diagram and find :

- i) Earliest time and latest time of each activity
- ii) Critical path
- iii) Duration of project.

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