B. TECH. (COMPUTER SCIENCE & BUSINESS SYSTEMS) (CBCS - 2018 COURSE)

B.Tech. (CSBS) Sem - IV :SUMMER- 2022

SUBJECT : OPERATIONS RESEARCH

Day : Tuesday | Time : 10:00 AM-01:00 PM

Date : 28-06-2022 | **S-20457-2022** | Max. Marks : 60

N.B.:

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Use of non-programmable **CALCULATOR** is allowed.
4) Draw neat and labeled diagram **WHEREVER** necessary.
5) Assume suitable data if necessary.

Q.1 How are models used in Operations Research? **[10]**

OR

Q.1 What are the advantages and disadvantages of mathematical approach of solving an Operations Research problem? **[10]**

Q.2 Solve the following LPP: **[10]**

Max $Z = 2x + y$

Subject to $x + 2y \leq 10$

$x + y \leq 6$

$x - y \leq 2$

$x - 2y \leq 1$

$x, \ y, \geq 0$

OR

Q.2 Discuss the graphical method of solving an LPP problem. **[10]**

Q.3 Solve the transportation problem for which the costs, availabilities and requirements are given in the table below. **[10]**

	D_1	D_2	D_3	D_4	D_5	D_6	Ai
O_1	1	2	1	4	5	2	30
O_2	3	3	2	1	4	3	50
O_3	4	2	5	9	6	2	75
O_4	3	1	7	3	4	6	20
Bj	20	40	30	10	50	25	

OR

Q.3 What is an Assignment problem? State its use in business. **[10]**

Q.4 Describe various floats in a network modeling. **[10]**

OR

Q.4 What are the various time estimates used in PERT? What is its significance? **[10]**

Q.5 What is EOQ? Derive the formula for it. **[10]**

OR

Q.5 What are the various costs associated with Inventory? **[10]**

Q.6 What is Monte Carlo simulation? **[10]**

OR

Q.6 What is Kendell's Notation? **[10]**

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