BIJU PATNAIK INSTITUTE OF INFORMATION TECHNOLOGY & MANAGEMENT STUDIES, BHUBANESWAR

Semester : 10ʰ Sem. IMBA
Batch : 2020-25
Subject : Operations Research Applications
Subject Code : 16IMN1001D

Date : 03.03.2025
Class Test – I
Duration : 1 Hr.
Full Marks : 30

Section- A

1. Answer any four out of following questions.   [4 x 2 = 8]

    a. Define Dynamic Programing   [CO1]
    b. Differentiate between linear programming & integer programming. [CO1]
    c. What are the objectives of Routing Problem?   [CO2]
    d. What are the service channel used in Queuing Model?   [CO2]
    e. How to convert on unbalanced TP to balanced TP?   [CO2]

Section-B

2. **Answer any two questions out of following**   [2 x 6= 12]

    a.   Write the scope of operation research.   [CO1]
    b. A sales man wants to visit the four cities A, B, C & D. The distance in KM from each city to the other cities is given by the table.   [CO2]

	A	B	C	D
A	--	45	15	39
B	40	--	49	39
C	81	31	--	59
D	39	39	35	--

Determine the smallest route covered by the salesman.

c. Define Simplex Method. How to solve linear programming problems using the simplex method? Briefly Explain. CO1

Section-C

3. Answer any one out of following questions.   [1 x 10= 10]

    a.   Define operations research? Describe various scopes of operation research. CO1
    b.   Find the optimum integer solution to the following LPP. CO2
    Max $Z = 5x_1 + 8x_2$
    Stc. $X1 + 2X2 \leq 8$
    $\quad 4x1 + x2 \leq 10$
    And $x1, x2 \geq 0$
    $\quad$ And integer

All the Best