

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-VII Semester (CSE/IT)

COURSE CODE (CREDITS): 19B1WCI737 (3)

MAX. MARKS: 15

COURSE NAME: Optimization Methods in Business Analytics

COURSE INSTRUCTORS: Dr. Meghna Dhalaria

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	CO	Marks
Q1	One kind of cake requires 200g of flour and 25g of fat, and another kind of cake requires 100g of flour and 50g of fat. Find the maximum number of cakes that can be made from 5kg of flour and 1 kg of fat assuming that there is no shortage of the other ingredients used in making the cakes? Solve using Graphical Method.	2	[5]
Q2	Find the solution using simplex Big M method $Max Z = 3x_1 + 2x_2$ Subject to $2x_1 + x_2 \leq 2$ $3x_1 + 4x_2 \geq 12$ and $x_1, x_2 \geq 0$	2	[6]
Q3.	Find dual from primal conversion $Max Z = 10x_1 + 13x_2 + 19x_3$ Subject to $6x_1 + 5x_2 + 3x_3 \leq 26$ $4x_1 + 2x_2 + 5x_3 \leq 7$ and $x_1, x_2, x_3 \geq 0$	2	[4]