विश्वजीवनामृतं ज्ञानम्

Atal Bihari Vajpayee Indian Institute of Information Technology & Management, Gwalior

IT305: Optimization Techniques

Minor Examination (Session 2024–25)

Maximum Time: 1 Hour **Max Marks: 20**

Note: Answer all questions briefly. Write formulas wherever applicable.

1. Explain the concept of convex sets and convex functions with examples. (4 Marks)
2. Solve the following linear programming problem using the graphical method: Maximize $Z = 3x_1 + 2x_2$ subject to $x_1 + x_2 \leq 4,\ x_1 \leq 2,\ x_2 \leq 3,\ x_1, x_2 \geq 0$. (6 Marks)
3. Differentiate between feasible solution, basic feasible solution, and optimal solution in LPP. (4 Marks)
4. Write short notes on: (a) Transportation problem (b) Assignment problem (6 Marks)