Test-2 (Optimization Techniques)

Note: All questions are compulsary.

1. Discuss Dual Problem when primal is in canonical form. (4 Marks)
2. Solve the following. (3 Marks)

Costruct the dual problem for the following :

Maximize $Z = 16x_1 + 14x_2 + 36x_3 + 6x_4$,

subject to $14x_1 + 4x_2 + 14x_3 + 8x_4 = 21$,

$13x_1 + 17x_2 + 80x_3 + 2x_4 \leq 48$,

$x_1, x_2 \geq 0$; x_3, x_4 unrestricted .

3. Solve the following. (8 Marks)

Solve the following l.p.p. by using its dual:

Maximize $Z = 5x_1 - 2x_2 + 3x_3$,

subject to $2x_1 + 2x_2 - x_3 \geq 2$,

$3x_1 - 4x_2 \leq 3$,

$x_2 + 3x_3 \leq 5$,

$x_1, x_2, x_3 \geq 0$.