**BHARTIYA VIDYA MANDIR (BVM) COLLEGE OF MGMT. EDUCATION**

**QUESTION BANK**

**BBA- VI SEM**

**602- Operation Research**

**Note : All questions carry 2.5 marks.**

Q.1 What is linear programming problem? Explain its advantages.

Q.2 What are the major limitations of linear programming problem?

Q.3 Write short notes on from the following .

(a) objective function (b) Linear relationship (c) Feasible zone.

Q.4 What do you understand by optimal allocation of resources? Give various characteristics of a LPP.

Q.5 Solve linear programming problem by graphical method.

Maximize $z = 5x_1 + 3x_2$

Subject to $3x_1 + 5x_2 \leq 15$

$5x_1 + 2x_2 \leq 10$

$X_1 \& x_2 \geq 0$

Q.6 Solve linear programming problem by graphical method.

Maximize $z = 5x_1 + 3x_2$

Subject to $2x_1 + x_2 \leq 1000$

$x_1 \leq 400$

$x_2 \leq 700$

$X_1 \& x_2 \geq 0$

Q.7 Solve linear programming problem by graphical method.

Minimize $z = 6x_1 + 14x_2$

Subject to $5x_1 + 4x_2 \geq 60$

$3x_1 + 7x_2 \leq 84$

$X_1 + 2x_2 \geq 18$

$X_1 \& x_2 \geq 0$

Q.8 Solve linear programming problem by graphical method.

Minimize $z = 20x_1 + 40x_2$

Subject to $36x_1 + 6x_2 \geq 108$

$3x_1 + 12x_2 \geq 36$

$20X_1 + 10x_2 \geq 100$

$X_1 \& x_2 \geq 0$

Q.9 What is a general transportation problem? Explain with an example step by step solution of a transportation problem.

Q.10 A manufacturer wants to ship 8 loads of his product from production centers x, y and z to distribution centers A,B and C. The mileage from origin 'o' to destination 'D' is given in the following matrix.

Distribution centers

| | | A | B | C | Available |
|---|---|---|---|---|---|
| production | X | 50 | 30 | 220 | 1 |
| centers | Y | 90 | 45 | 170 | 3 |
| | Z | 250 | 200 | 50 | 4 |
| Required | | 3 | 3 | 2 | 8 |

If the shipping cost is Rs 10 per load per mile what shipping schedule should be used? Using vogal's approximation method

Dileep jain