**Solution:**

**Decision Variable:**

Let,

Xij = AED distribution from plant i to warehouse j

i = Plants; i = A, B

j = Warehouse; j = 1, 2, 3

**Objective Function:**

To minimize the transportation cost of AEDs.

Min = 22 XA1 + 14 XA2 + 30 XA3 + 16 XB1 + 20 XB2 + 24 XB3 + 600 XA1 + 600 XA2 +600 XA3 + 625 XB1 + 625 XB2 + 625 XB3 + 0 XAD + 0 XBD;

**Constraints:**

1. Supply/Capacity Constraints:

XA1 + XA2 + XA3 + XAD = 100;

XB1 + XB2 + XB3 + XBD = 120;

1. Demand Constraints:

XA1 + XB1 = 80;

XA2 + XB2 = 60;

XA3 + XB3 = 70;

1. Dummy Variable:

Production Capacity = 100 + 120 = 220

Demand = 80 + 60 + 70 = 210

Thus, create a dummy variable in demand section to equate the supply and demand.

Dummy Variable D = 10;

XAD + XBD = 10;

**Mathematical Formulation of Linear Programming Problem:**

Let,

Xij = AED distribution from plant i to warehouse j

i = Plants; i = A, B

j = Warehouse; j = 1, 2, 3

Min = 22 XA1 + 14 XA2 + 30 XA3 + 16 XB1 + 20 XB2 + 24 XB3 + 600 XA1 + 600 XA2 +600 XA3 + 625 XB1 + 625 XB2 + 625 XB3 + 0 XAD + 0 XBD;

Subject To

XA1 + XA2 + XA3 + XAD = 100;

XB1 + XB2 + XB3 + XBD = 120;

XA1 + XB1 = 80;

XA2 + XB2 = 60;

XA3 + XB3 = 70;

XAD + XBD = 10;

And

Xij >= 0;

i = A, B; j = 1, 2, 3;