# ASSIGNMENT

1. A manager has three alternatives open to him each of which can be followed by any of the four possible events. The conditional payoffs (in Rs.) for each action-event combination are given below:

| Alternatives | Events | | | |
|---|---|---|---|---|
| | A | B | C | D |
| X | 18 | 0 | -20 | 16 |
| Y | -14 | 22 | 28 | -12 |
| Z | 24 | 16 | 0 | 18 |

Determine which alternative should the manager choose, if he adopts the

(i) Maximin (ii) Maximax (iii) Hurwicz ($\alpha = 0.7$)   (iv) Laplace criterion

**Answer: (i) Z     (ii) Y             (iii)      Z                 (iv) Z**

2. A dealer of a particular commodity makes a profit of Rs. 30 on
each sale within the same week of purchase; otherwise he incurs a loss of Rs. 30 on each unit of commodity. The data on the past sales are given below:

|  Units sold: | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|
| Frequency: | 0 | 9 | 12 | 24 | 9 | 6 | 0 |

(i) Find out the optimum number of units the dealer should buy every week in order to maximize the profit.

(ii) Calculate expected value of perfect information

**Answer: (i) 8     (ii) EVPI = Rs. 25.50**

3. The estimated sales of proposed types of perfumes are as under:

| | Estimated levels of sales (units) | | |
|---|---|---|---|
| Perfume | 20000 | 10000 | 5000 |
| A | 25 | 15 | 10 |
| B | 40 | 20 | 5 |
| C | 60 | 25 | 3 |

For minimax regret criterion state the optimal action.

**Answer:** Perfume C, minimax regret amount being 0.

1.