Dr. Babasaheb Ambedkar Open University
Term End Exam August – 2010

Course Code : DOR-04 Roll No._____

Subject : Other Methods of Operation Research

Date : 03-08-2010 Marks : 70

Time : 03:00 to 06:00

Note : All questions carry equal marks.

Que 1: Describe the steps involved in the process of decision making.

OR

Explain and illustrate the following principles of decision making
a) Maximax
b) Equally likely

Que 2: What are decision trees? How and in what type of situations are they employed for decision making?

OR

Describe the types of decision making environment.

Que 3: Explain the techniques to deal with risk.

OR

Classify the degrees of certainty with explanation.

Que 4: Dharmilk, a small industry finds from the past data that the expense of making an item is Rs.25, the selling price is Rs.30 if it is sold within a week, and it could be disposed of at Rs.20 per item at the end of the week:

Weekly Sales	<3	4	5	6	7	>8
No.of weeks	0	10	20	40	30	0

Find the optimum number of items per week the industry should produce.

OR

Que 4: The Research department of Hindustan Lever has recommended the

(P.T.O)

marketing department to launch a shampoo of three different types. The marketing manager has to decide one of the types of shampoo to be launched under the following estimated pay-offs (in millions of Rs) for various levels of sales:

	Estimates level of sale (Units)		
Types of shampoo	15,000	10,000	5,000
Egg shampoo	30	10	10
Clinic shampoo	40	15	5
Deluxe shampoo	55	20	3

What will be the marketing manager's decision if (a) Maximin (b) Maximax (c) Laplace and (d) Regret criterion is applied?

Que 5: The Nirma Ltd. is considering the purchase of a new investment. Two alternative investments are available (A and B) each costing Rs. 1,00,000. Cash inflows are expected to be as follows:

	Cash inflows	
Year	Investment A Rs.	Investment B Rs.
1	40,000	50,000
2	35,000	40,000
3	25,000	30,000
4	20,000	30,000

The company has a target return on capital of 10%. Risk premium rates are 2% and 8% respectively for investments A and B. Which investment should be preferred?

Or

Que 5: Neetu Ltd. is considering two mutually exclusive projects A and B. In both the cases, initial investment will be rs.1,10,000 and the useful life of both will be 10 years. No project has scrap value. The probable cash flow will be as follows:

	Project A Rs.	Project B Rs.
Optimistic	50,000	70,000
Most Likely	40,000	35,000
Pessimistic	18,000	4,000

If the rate of discount is 10% calculate present value and state which project is better out of two. The annuity of Rs.1 at 10% for years is Rs. 6.145.