Roll No. ....

Maximum Marks : 70   *Minimum Pass Marks :* 28

Note—Attempt *all* questions.

1. Answer *all* parts—   14
    (i)   Discuss scope of operations research.
    (ii) Discuss decision making under uncertainty and risk.
    (iii) Write steps of formulation of LP problems.
    (iv) Discuss the classification of queuing models.

2. Discuss uses of operations research in modern business decision making process. An operations research provide bad answers to worse answers justify.
                                                                                        14

3. A newspaper boy has the following probabilities of selling a magazine : 14

No. of copies sold	10	11	12	13	14
Probability	0.10	0.15	0.20	0.25	0.30

    Cost of a copy is 30 paise and sale price is 50 paise. He cannot return unsold copies. How many copies should he order ?

4. Find the initial solution to following transportation Problem using VAM.

                                                                                        14

    Destination

Factory	D_1	D_2	D_3	D_4	Supply
F_1	3	3	4	1	100
F_2	4	2	4	2	125
F_3	1	5	3	2	75
Demand	120	80	75	25	

                                                                                        P.T.O.

5. A project schedule has the following characteristics—

Activity	Time (days)
1-2	4
1-3	1
2-4	1
3-4	1
3-5	6
4-9	5
5-6	4
5-7	8
6-8	1
7-8	2
8-10	5
9-10	7

(1) Construct a network diagram.
(2) Compute the earliest event time and latest event time.
(3) Determine the critical path $ total project duration.
(4) Compute total $ free float for each activity.   14