weed harvesting machines, along with the estimated time (in weeks) for completion of each Activity are listed below.

ACTIVITIES	IMMEDIATE	TIME(WEEKS)
A	-	6
B	-	5
C	A	3
D	A	2
E	B	4
F	B	6
G	C,E	10
H	D,F	7

(i) Develop and draw a PERT Network for the problem
(ii) Identify and exhibit the critical path
(iii) Determine the total project completion time

Q. 3 b The demand for newspaper by a newspaper agency is as follows. He purchases a paper for Rs. 2.00 and sells for Rs. 2.50. Scape is Rs. 0.30 per paper. Simulate the demand for next 10 days using the random numbers also find the average profit/loss in these transactions.

Demand	30	35	40	45	50	55	60
Probability	0.03	0.07	0.10	0.20	0.35	0.20	0.05

Random numbers are- 46   69   94   68   84   33   58   30   70   51

Q. 4 a A company needs 6000 units of a product per month. The product is purchased from outside for which ordering cost is Rs 200 per order. The cost of holding inventory Rs 15 per unit per month. How many units should be ordered? What is the cost? How many orders will be required ? Lead time is 10 days. If the company is operative on 300 days in a year, what is the reorder point?

Q. 4 b The cost of an equipment is s. 10000. And maintenance cost in the first year is zero, there after it increase by Rs 2000 every year. When should the machine be replaced without considering the time value of money?

Year	1	2	3	4	5	6	7	8	9
Resale value	2000	1500	1400	1200	1000	950	925	900	900

Q 5 a Draw a network diagram for the activities given below:

Activity	: A	B	C	D	E	F	G	H	I	J
Immediate Predecessor	: -	A	A	A	B	C	C	E,F	D,G	H,I
Duration (months)	: 12	8	4	3	12	18	5	4	9	6

Calculate the total float, free float and independent float for each activity.

Q. 5 b A company produces two products X1 and X2. Using two resources A and B. The resources are machine hours expressed in hours per week. Profits earned per unit by X1 and X2 are Rs. 3 and Rs. 4 respectively. The company wants to maximize the profit and uses Simplex Method to plan weekly production of X1 and X2. The simpex tableau for maximum profit is given below: