T section

09 April 2025 08:16

Q2. Use an algorithm for greedy strategies for the knapsack to find an optimal solution to the knapsack instance n=7,m=15, (p1,p2….,p7)= (10,5,15,7,6,18,3), and (w1,w2,…w7) =(2,3,5,7,1,4,1).

Object	Wt	Profit	P/W
1	2	10	5
2	3	5	5/3 = 1.6
3	5	15	3
4	7	7	1
5	1	6	6
6	4	18	4.5
7	1	3.	3

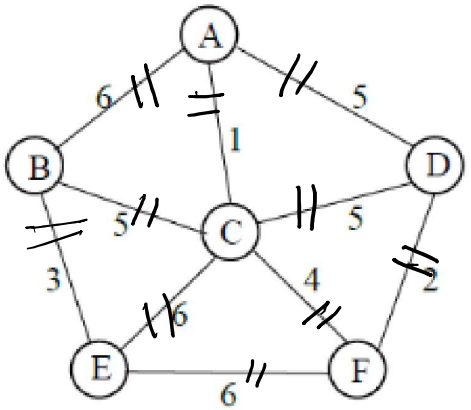
object	wt	Profit	Remaining capacity of knapsack
5	1	6	15-1 = 14.
1	2	10	14-2 = 12
6	4	18	12-4 = 8
7	1	3	8-1 = 7.
3	5	15	7-5 = 2
2	2	3.2	2-2=0.

Max Profit = 55.

Q2. Formulate Fractional Knapsack Problem. Write Greedy Algorithm for fractional Knapsack Problem. Find the optimal solution for the following fractional Knapsack problem.
n=4, m = 60, W={40, 10, 20, 24} and P={280, 100, 120, 120}

Object	weight	Profit	P/W
1	40	280	7
2	10	100	10
3	20	120	6
4	24	120	5

Obj	Weight	Profit	Remaining capacity of knapsack.
2	10	100	60-10=50
1	40	280	50-40 = 10.
3	10	6x10=60	10-10 = 0.
		440	



Node From	Node To	Weight.
C	F	4
B	F	2
E	F	6.
A	D	5 Loop.
A	D	5. Loop.
A	C	1
B	C	5
E	C	6
A	B	6.
B	E	3.