


National University of Computer and Emerging Sciences, Lahore Campus

	Course:	Design and Analysis of Algorithms	Course Code:	CS302
	Program:	BS(Computer Science)	Semester:	Spring 2018
	Duration:	10 Minutes	Total Marks:	10
	Paper Date:	3-April-18	Weight	3
	Section:	E	Page(s):	1
	Exam:	Quiz 4(a)	Roll No:	
			Section:	

Suppose that in binary knapsack problems, all the items have unit weight but different value. Given set I , of n items and bag capacity W , devise an algorithm that select a subset of items whose collective weight does not exceed the capacity of bag, yet maximize the collective profit of selected items. Describe your algorithm in words. Is this algorithm a dynamic programming algorithm?

As all the items have unit weight that means we can always put the W number of items in the bag for some specified capacity W . So collective profit will be maximize by the greedy strategy i.e. select that item first whose value is maximum.

Sort all the items according to the value

While capacity is not full add item i and update the bag remaining capacity