This quiz has been regraded; your score was affected.

Quiz 4

Due Apr 26 at 11:59pm **Points** 8 **Questions** 8
Available Apr 17 at 11:59pm - Apr 26 at 11:59pm 9 days **Time Limit** 15 Minutes

This quiz was locked Apr 26 at 11:59pm.

Attempt History

	Attempt	Time	Score	Regraded
LATEST	Attempt 1	15 minutes	5 out of 8	6 out of 8

Score for this quiz: **6** out of 8
Submitted Apr 26 at 3:20pm
This attempt took 15 minutes.

Question 1 — 1 / 1 pts

The RECURSIVE-ACTIVITY-SELECTOR

- returns the minimum set of the subproblem
- a nested conditional statement
- return a maximum set of compatible activites for the subproblem

Correct!

Question 2 — 1 / 1 pts

A greedy algorithm

Is the most effective method for every scenario to same run time

Correct!

is looking for the best opportunity at the moment

Finds the solution to all sub-problems, and then finds the minimum or maximum value.

Optimizes problems dynamically

Question 3

Original Score: 0 / 1 pts **Regraded Score: 1 / 1 pts**

This question has been regraded.

A greedy algorithm should include the following steps:

- find the set of candidate solutions,
- check if the candidate solutions are feasible,
- a discovery time of the shortest path
- a function element that finds the best unused candidate solution.

True

Correct!

False

- a discovery time of the shortest path is not always true with greedy algorithms

Question 4

1 / 1 pts

The greedy-choice property is an optimal global solution that is achieved by making a locally optimal (greedy) choice.

Correct!

- (selected) True
- False

Question 5

0 / 1 pts

Consider a greedy approach for solving the knapsack problem, where we first calculate the value per weight unit for each item *i*; i.e., $v_i = b_i / w_i$, where b_i denotes the benefit of item i and w_i represents its weight. Then, we sort all values v_i in a decreasing order, and fill the knapsack from the beginning of the sorted list. Which of the following is correct?

ou Answered

- (selected) This approach works only for 0-1 knapsack.

orrect Answer

- This approach works only for fractional knapsack.
- This approach works for both 0-1 and fractional knapsack.

Question 6

0 / 1 pts

Which of the following greedy strategies results in the least optimal solution for the activity selection problem? Select all that applies.

- Latest start time

ou Answered

- (selected) Earliest finish time

orrect Answer

- [ ] Latest finish time

Correct!

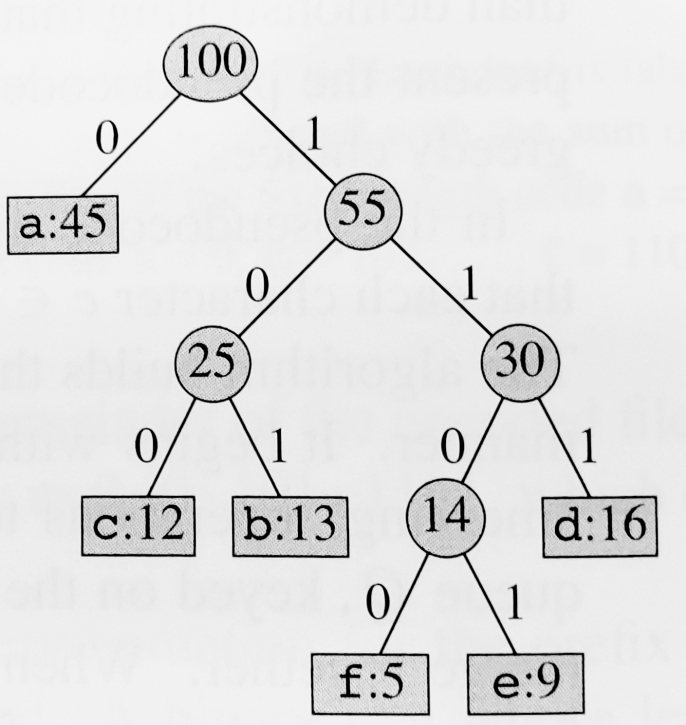
- [x] Earliest start time

Question 7

1 / 1 pts

Assume that we have the following frequencies for the characters in a text. Is the following a correct Huffman coding tree?

f:5 e:9 c:12 b:13 d:16 a:45



Correct!

- (•) True
- ( ) False

Question 8

1 / 1 pts

A matroid is an ordered pair $M = (S, I)$ where:

1. S is a finite set.
2. I is a non-empty family of subsets of S called the independent subsets of S, such that if $B \in I \; and \; A \subseteq B, \; then \; A \in I$, making I hereditary.
3. If $A \in I, \; B \in I, \; and \; \mid A \mid < \mid B \mid$ then there is exists some element $x \; \in \; B - A$ such that $A \cup \{x\} \in I$, therefor M satisfies the exchange property.

Correct!

- (•) True
- ( ) False

Quiz Score: **6** out of 8