

[My Courses](#) / [My courses](#) / [Algorithms and Data Structures, MSc \(Spring 2023\)](#) / [Mandatory Activities](#) / [Graph terminology](#)

#### Information

Here we train our terminology by revisiting some data structures we've already seen.

#### Question 20

Not yet answered

Marked out of 1.00

Recall the graph-theoretic view of the data structure for Union-Find called (Weighted) Quick-Union.

Which descriptions are true about the data structure at any time during the operations?

We disregard the self-loop at the root.

- ☒ a. Each equivalence class corresponds to a tree
- ☒ b. The in-degree is 2
- ☒ c. There are parallel edges
- ☒ d. A forest of in-trees
- ☒ e. The graph is connected, but not strongly connected
- ☒ f. A forest of out-trees
- ☒ g. Each node can reach exactly one root
- ☒ h. An out-tree
- ☒ i. The edges are weighted with different integers
- ☒ j. There is only one leaf
- ☒ k. The number of nodes equals the number of equivalence classes
- ☒ l. The graph is acyclic
- ☒ m. Each element corresponds to a node
- ☒ n. An in-tree

## Question 21

Not yet answered

Marked out of 1.00

Consider the singly linked list as a graph. Which claims are true?

- ☒ a. The out-degree is at most 1.
- ☒ b. The in-degree is at most 1.
- ☒ c. It is a path.
- ☒ d. It is connected.
- ☒ e. It has a single source.
- ☒ f. It has a single sink.
- ☒ g. It is acyclic.

## Question 22

Not yet answered

Marked out of 1.00

View a heap as a graph. Which properties does it have?

- ☒ a. All pairwise (undirected) distances are logarithmic in  $V$
- ☒ b. It is binary
- ☒ c. It is rooted
- ☒ d. It can have parallel edges
- ☒ e. It is a tree