

# Quiz 7

Deadline	Friday, 31 July 2020 at 11:59PM
Latest Submission	<i>no submission yet</i>
Maximum Mark	4

## Question 1 (1 mark)

Consider the following array of pairs

{ (a,5), (b,4), (c,2), (d,3), (d,2), (a,4), (c,1), (b,3) }

Which of the following shows the result of sorting this array on the first element in each pair using a *stable sort* ?

(a) <input type="radio"/>	{ (a,5), (b,4), (c,2), (d,3), (d,2), (a,4), (c,1), (b,3) }
(b) <input type="radio"/>	{ (a,4), (a,5), (b,3), (b,4), (c,1), (c,2), (d,2), (d,3) }
(c) <input type="radio"/>	{ (a,5), (a,4), (b,4), (b,3), (c,2), (c,1), (d,3), (d,2) }
(d) <input type="radio"/>	{ (c,1), (c,2), (d,2), (b,3), (d,3), (b,4), (a,4), (a,5) }
(e) <input type="radio"/>	None of the above resulted from a stable sort

## Question 2 (1 mark)

Consider the following array, about to be sorted using quicksort

{ 3, 2, 5, 9, 7, 8, 1, 6, 4 }

Which of these items would be chosen as the pivot if *median-of-three* pivot selection is used?

(a) <input type="radio"/>	3
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(b) <input type="radio"/>	4
(c) <input type="radio"/>	5
(d) <input type="radio"/>	6
(e) <input type="radio"/>	7
(f) <input type="radio"/>	None of the above

**Question 3 (1 mark)**

Consider the following array

```
{ 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11, 10 }
```

What would this array look like after the first three scans of the bubble sort algorithm?

(a) <input type="radio"/>	<pre>{ 10, 11, 12, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13 }</pre>
(b) <input type="radio"/>	<pre>{ 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 }</pre>
(c) <input type="radio"/>	<pre>{ 10, 23, 22, 21, 20, 19, 18, 17, 16, 15, 14, 13, 12, 11 }</pre>
(d) <input type="radio"/>	<pre>{ 10, 11, 12, 22, 23, 20, 21, 18, 19, 16, 17, 14, 15, 13 }</pre>

**Question 4 (1 mark)**

What would be the result of merging these two arrays

```
{ 4, 10, 15, 16, 23, 24, 31, 42 }
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{ 1, 2, 12, 13, 39 }
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(a) <input type="radio"/>	<pre>{ 1, 2, 12, 13, 39, 4, 10, 15, 16, 23, 24, 31, 42 }</pre>
(b) <input type="radio"/>	<pre>{ 1, 2, 4, 10, 12, 13, 15, 16, 23, 24, 31, 39, 42 }</pre>

(c) <input type="radio"/>	<div>{ 42, 39, 31, 24, 23, 16, 15, 13, 12, 10, 4, 2, 1 }</div>
(d) <input type="radio"/>	The arrays cannot be merged because they are different lengths
(e) <input type="radio"/>	None of the above is correct

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