CSCI 2270 - Zagrodzki, Ashraf, Trivedi - CS2: Data Structures

Started on	Sunday, 16 February 2020, 8:14 PM
State	Finished
Completed on	Sunday, 16 February 2020, 8:24 PM
Time taken	10 mins 10 secs
Grade	**7.50** out of 10.00 (**75**%)

Question **1**

Correct

Mark 1.25 out of 1.25

Rank the following Big-O complexity in ASCENDING order

A) O(N)

B) $O(N^2)$

C) O (1)

D) O (logN)

Select one:

- 1. They are all of the same complexity
- 2. A, B, C, D
- 3. C, D, A, B ✔
- 4. C, A, D, B
- 5. B, D, C, A

Your answer is correct.

The correct answer is: C, D, A, B

Question **2**

Correct

Mark 1.25 out of 1.25

What is the time complexity of the following function?

```
void myFunc(int arr[], int b[], int n )
{
    for( int i=0; i<n; i++)
    {
        a[i] = b[i] + 2 * a[i];
    }
}
```

Select one:

- a. None of these
- b. O(1)
- c. O(n) ✔
- d. O(n^2)

Your answer is correct.

The correct answers are: O(n), None of these

Question **3**

Correct

Mark 1.25 out of 1.25

What is the complexity in *big-O* notation for the following code

```
for (int i = 0; i < n; i++)
    for (int j = 0; j < i * i; j++)
    {
        cout << j << endl;
    }
```

Select one:

a. $O(n^2)$

b. O(n)

c. O(1)

d. O(log n)

e. $O(n^3)$ ✔

Your answer is correct.

The correct answers are: O(1), O(n), $O(n^2)$, $O(n^3)$, O(log n)

Question **4**

Correct

Mark 1.25 out of 1.25

What is the order in which elements come off a **stack?** Select all that apply.

Select one or more:

- [ ] a. first-in first-out(FIFO)
- [x] b. first-in last-out(FILO) ✔
- [ ] c. last-in last-out(LILO)
- [x] d. last-in first-out(LIFO) ✔

Your answer is correct.

The correct answers are: first-in last-out(FILO), last-in first-out(LIFO)

Question **5**

Incorrect

Mark 0.00 out of 1.25

```
1   class QueueLL
2   {
3     private:
4       struct Node
5       {
6           int key;
7           Node *next;
8       };
9
10      Node* queueFront;
11      Node* queueEnd;
12
13    public:
14      QueueLL();
15      ~QueueLL();
16      bool isEmpty();
17      void enqueue(int key);
18      void dequeue();
19      int peek();
20    void printq();
21  };
22
23
24  void QueueLL::enqueue(int key)
25  {
26      Node *nn = new Node;
27      nn->key = key;
28      nn->next = nullptr;
29    if (isEmpty()){
30      queueFront = nn;
31      queueEnd = nn;
32    }
33    else{
34      queueEnd->next = nn;
35    }
36  }
```

What is the problem in this enqueue function?

Select one:

a. New element doesn't be pointed

b. QueueFront doesn't always point to the first element

c. This function works without any problem ✖

d. QueueEnd doesn't always point to the last element

Your answer is incorrect.

The correct answer is: QueueEnd doesn't always point to the last element

Question **6**

Incorrect

Mark 0.00 out of 1.25

When pushing an element onto a stack implemented with an array, how will the **top** index change**?**

Select one:

top will not change ✖

top -- ;

top = top + 1;

top = top - 1;

Your answer is incorrect.

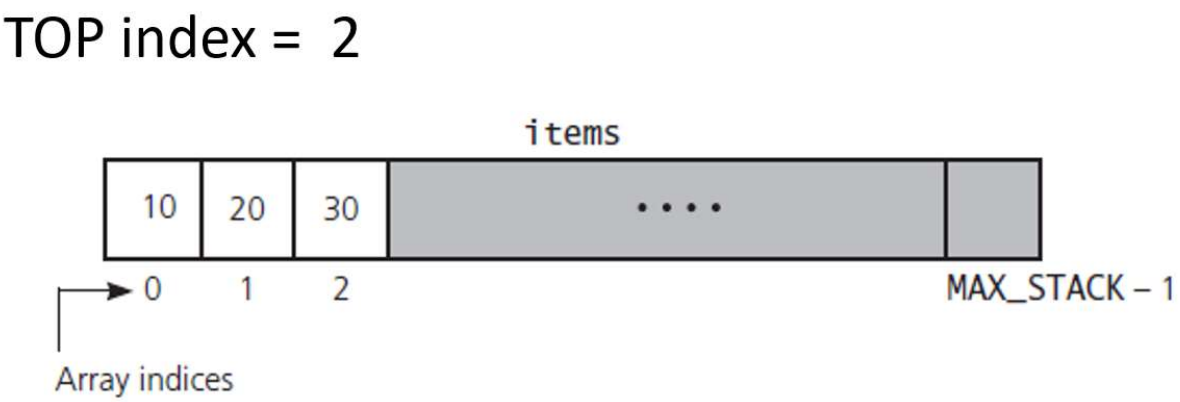
The correct answer is: top = top + 1;

Question 7

Correct

Mark 1.25 out of 1.25

Given this graphic of an array-based stack.



What would be returned by a call to the method peek()

Select one:

- a. 2
- b. 10
- c. 20
- d. 30 ✔
- e. None of all

Your answer is correct.

The correct answer is: 30

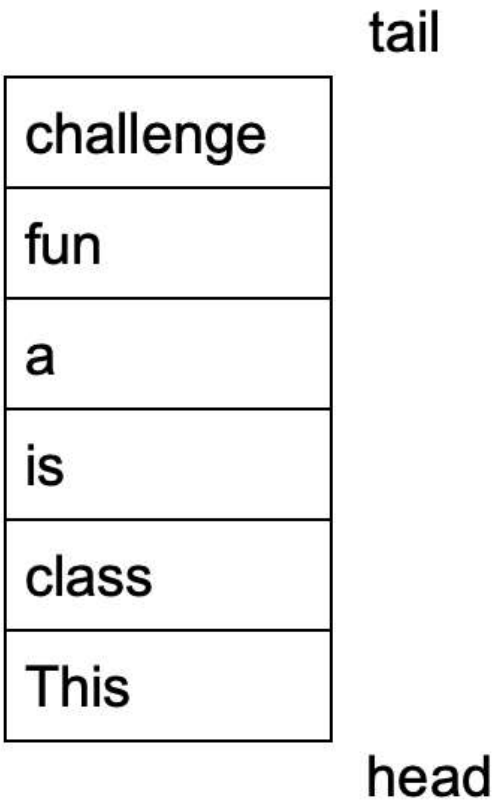
Question **8**

Correct

Mark 1.25 out of 1.25

"This class is a fun challenge"

Adding this sentence to a queue, the queue will look as follows:



What is the element that will be firstly **dequeued** from this queue?

Select one:

- fun
- This ✔
- challenge
- class

Your answer is correct.

The correct answer is: This