QUIZIZZ

NAME : _____

CLASS : _____

unit-3 test-2

12 Questions

DATE : _____

1. **Suppose you are given an implementation of a queue of integers. The operations that can be performed on the queue are:**
i. isEmpty (Q) — returns true if the queue is empty, false otherwise.
ii. delete (Q) — deletes the element at the front of the queue and returns its value.
iii. insert (Q, i) — inserts the integer i at the rear of the queue.
Consider the following function:

```
void f (queue Q) {
int i ;
if (!isEmpty(Q)) {
 i = delete(Q);
f(Q);
insert(Q, i);
}
}
```

What operation is performed by the above function f ?

a) Leaves the queue Q unchanged
b) Reverses the order of the elements in the queue Q
c) Deletes the element at the front of the queue Q and inserts it at the rear keeping the other elements in the same order
d) Empties the queue Q

Give the correct option form the question

A b

B a

C c

D d

2. **Which of the following permutations can be obtained in the output (in the same order) using a stack assuming that the input is the sequence 1,2, 3, 4, 5 in that order?**

a) 3, 4, 5, 1,2
b) 3, 4, 5, 2, 1
c) 1,5, 2, 3, 4
d) 5, 4, 3, 1, 2

Give the correct option from the question

A d

B c

C b

D a

3. **Consider the following statements:**
(i) First-in-first out types of computations are efficiently supported by STACKS.
(ii) Implementing LISTS on linked lists is more efficient than implementing LISTS on an array for almost all the basic LIST operations.
(iii) Implementing QUEUES on a circular array is more efficient than implementing QUEUES, on a linear array with twg indices.
(iv) Last-in-first-out type of computations are efficiency supported by QUEUES.
a) (ii), (iii) are true
b) (i), (ii) are true
c) (iii), (iv) are true
d) (ii), (iv) are true

Select the correct option from the question

A a

B b

C d

D c

4. **Consider the following pseudocode that uses a stack**

```
declate a stack of characters
while (there are more characters in the word to read)
{
read a character
push the character on the stack
}
while ( the stack is not empty)
{
pop a chatacher off the stack
write the character to the screen
}
```

Q.
What is output for input "geeksquiz"?
a) geeksquizgeeksquiz
b) ziuqskeeg
c) geeksquiz
d) ziuqskeegziuqskeeg

select the correct option from the question

A a

B b

C c

D d

5. **A function f defined on stacks of integers satisfies the following properties. f(∅) = 0 and f (push (S, i)) = max (f(S), 0) + i for all stacks S and integers i.**
If a stack S contains the integers 2, -3, 2, -1, 2 in order from bottom to top, what is f(S)?
a) 6
b) 4
c) 3
d) 2

select the option form the question

A c

B d

C b

D a

6. **Here is an infix expression: 4 + 3*(6*3-12). Suppose that we are using the usual stack algorithm to convert the expression from infix to postfix notation. The maximum number of symbols that will appear on the stack AT ONE TIME during the conversion of this expression?**
a)1
b)2
c)3
d)4

select the correct option from the question

A c

B a

C b

D d

7. **A single array A[1..MAXSIZE] is used to implement two stacks. The two stacks grow from opposite ends of the array. Variables top1 and top2 (topl< top 2) point to the location of the topmost element in each of the stacks. If the space is to be used efficiently, the condition for "stack full" is**
a)(top1 = MAXSIZE/2) and (top2 = MAXSIZE/2+1)
b)top1 + top2 = MAXSIZE
c)(top1= MAXSIZE/2) or (top2 = MAXSIZE)
d)top1= top2 -1

select the option from the given question

A d

B b

C c

D a

8. **Consider the following sequence of operations on an empty stack.**
Push(54);push(52);pop();push(55);push(62);s=pop();
Consider the following sequence of operations on an empty queue.
enqueue(21);enqueue(24);dequeue();enqueue(28);enqueue(32);q=dequeue();
The value of s+q is _____.
a) 86
b) 68
c) 24
d) 94

select the answer from the question

A c

B d

C c

D a

9. **An item that is read as input can be either pushed to a stack and later popped and printed, or printed directly. Which of the following will be the output if the input is the sequence of items -1, 2, 3, 4, 5?**
a) 3, 4, 5, 1, 2
b) 3, 4, 5, 2, 1
c) 1, 5, 2, 3, 4
d) 5, 4, 3, 1, 2

select the correct option from the question

A c

B b

C d

D a

10. **Suppose implementation supports an instruction REVERSE, which reverses the order of elements on the stack, in addition to the PUSH and POP instructions. Which one of the following statements is TRUE with respect to this modified stack?**
a) A queue cannot be implemented using this stack.
b) A queue can be implemented where ENQUEUE takes a single instruction and DEQUEUE takes a sequence of two instructions.
c) A queue can be implemented where ENQUEUE takes a sequence of three instructions and DEQUEUE takes a single instruction.
d) A queue can be implemented where both ENQUEUE and DEQUEUE take a single instruction each.

select the correct option from the question

A b

B d

C a

D c

11.

Consider the following C program:

```
#include <stdio.h>
#define EOF -1
void push (int); /* push the argument on the stack */
int pop  (void); /* pop the top of the stack */
void flagError ();
int main ()
{               int c, m, n, r;
while ((c = getchar ()) != EOF)
{ if (isdigit (c) )
 push (c);
else if ((c == '+') || (c == '*'))
{       m = pop ();
n = pop ();
r = (c == '+') ? n + m : n*m;
push (r);
}
else if (c != ' ')
 flagError ();
}
        printf("% c", pop ());
}
```

What is the output of the program for the following input?

*5 2 * 3 3 2 + * +*

A	25	B	150
C	15	D	30

12.

A program attempts to generate as many permutations as possible of the string, 'abcd' by pushing the characters in the same order onto a stack, but it may pop off the top character at any time. Which one of the following strings CANNOT be generated using this program?

a) abcd
b) dcba
c) cbad
d) cabd

select the correct option from the question

A	b	B	c
C	a	D	d

Answer Key

1. a	2. c	3. a	4. b
5. a	6. d	7. a	8. d
9. b	10. d	11. a	12. d