1

Marks: 1

Consider the following statements.

(i) A stack is a list with the restriction that items are inserted or removed/deleted only at one position, namely the end of the list.

(ii) The general model is that one where there is some element that is at the top of the stack, and it is the only element that is visible.

(iii) A pop or top on an empty stack is generally considered an error in the stack ADT.

(iv) The fundamental operations on stacks are push and pop, where push is relevant to the removal of the most recently inserted element and pop is equivalent to an insertion.

(v) A stack is a list; insertion and deletion can be performed from both ends.

Which of the above statements is/are valid for stacks?

Choose at least one answer.

A. (i), & (ii) only Incorrect

B. (i), (ii) & (iv) only

C. (i), (ii), (iii) & (iv) only

D. (i), (ii) & (iii) only Correct

E. (i), (ii) & (v) only

Partially correct

Marks for this submission: 0.75/1.

Question 2

Marks: 1

Consider the following infix expression.

((A+B)\*C-(D-E))^(F+G)

Note: ^ denotes the power.

Equivalent postfix and prefix expressions are respectively

Choose at least one answer.

A. AB+C\*DE--FG+^ , ^-\*ABC-DE+FG

B. AB+C\*DE-FG+^ , ^-\*+ABC-DE+FG

C. AB+C\*DE--FG+^ , ^-\*+ABC-DE+FG Correct

D. AB+C\*DE-FG+^ , ^-\*+ACB-DE+FG

E. AB+C\*DE--FG+^ , ^-\*+CBA-DE+FG

Correct

Marks for this submission: 1/1.

Question 3

Marks: 1

The following shows a series of stack operations.

(i) Push(5)

(ii) Push(8)

(iii) Isempty()

(iv) Pop()

(v) Push(3)

(vi) Pop()

(vii) Pop()

(viii) Pop()

(ix) Isfull()

(x) Push(3)

If the above series of operations is performed, what would be the set returned values?

Choose at least one answer.

A. {false, 8, 3, 5, error, false, 3}

B. {5, 8, false, 8, 3, 5, error, false, 3}

C. {false, 8, 3, 5, error, false} Correct

D. {false, 8,3, 5, false}

E. {false, 8, 3, 5, error, true}

Correct

Marks for this submission: 1/1.

Question 4

Marks: 1

Consider the following operations and their definitions.

(i) Clear() :- Clear the stack.

(ii) Is\_Empty() :- Remove all items from the stack.

(iii) Insert(x) :- Insert element x in to any location of the stack.

(iv) Delete(p) :- Delete the element from the position p.

(v) Top() :- Return and remove the topmost element from the stack.

Which of the above operations is/are valid in stacks according to the basic definitions?

Choose at least one answer.

A. (i), (ii) and (v) only

B. (i) and (v) only Incorrect

C. (i) only Correct

D. (i) and (ii) only

E. (i), (ii), (iii), (iv) and (v)

Partially correct

Marks for this submission: 0.75/1.

Question 5

Marks: 1

Consider the following activities:

(i) Return and remove the most recently inserted item from the stack.

(ii) Exception underflow if the stack is empty

Which of the following Java codes perform(s) the above activities?

Choose at least one answer.

A. (a)

B. (b)

C. (c) Correct

D. (d)

E. (e)

Correct

Marks for this submission: 1/1.

Question 6

Marks: 1

Consider the following statements:

(i) The queue can be implemented by a linked list.

(ii) The queue can be implemented only by stack.

(iii) There are references kept at both the front and the back of the list.

(iv) The Queue can be implemented only by an array-based method.

Which of the above statement(s) is/are valid for the queues?

Choose at least one answer.

A. (i) only Incorrect

B. (i),(ii) and (iii) only

C. (i) and (iii) only Correct

D. (i),(iii) and (iv) only

E. (ii) and (iv) only

Partially correct

Marks for this submission: 0.75/1.

Question 7

Marks: 1

Consider the Java program segment given below:

public void datastructure (object x);

{

if (isEmpty())

back=front= new ListNode( x);

else

back=back.next=new ListNode(x);

}

Which of the following describe(s) the activities of the above Java Program Segment?

Choose at least one answer.

A. If the queue is not empty, the new element is added to the back end of the queue.

B. If the queue is not empty, the new element is added to the front end of the queue. Incorrect

C. If the queue is empty, then it will make a queue of one element. Correct

D. If the stack is not empty, the new element is added to the back end of the queue.

E. If the stack is empty, then it will make a stack of one element.

Partially correct

Marks for this submission: 0.17/1.

Question 8

Marks: 1

Which of the following operation(s) is/are supporting Priority queues?

Choose at least one answer.

A. Remove the largest item. Correct

B. Replace the largest with a new item (unless the new item is the largest). Correct

C. Change the priority of an item. Correct

D. Remove any item.

E. Insert any item.

Partially correct

Marks for this submission: 0.75/1.

Question 9

Marks: 1

Which of the following is a /are hash function(s)?

Choose at least one answer.

A. Shortest path

B. Folding

C. Mid-square Correct

D. Extraction Correct

E. Binary

Partially correct

Marks for this submission: 0.67/1.

Question 10

Marks: 1

1) Consider the following paragraph with blanks.

A ..........(i)............ is a linear list where ..........(ii)......... and .......(iii)......take place at the same end. This end is called the .........(iv)......

What would be the correct way of filling the above blank positions ?

Choose at least one answer.

A. (i) queue (ii) insertion (iii) removals (iv) top

B. (i) stack (ii) insertion (iii) removals (iv) bottom

C. (i) stack (ii) insertion (iii) removals (iv) top correct

D. (i) stack (ii) removals (iii) insertion (iv) top correct

E. (i) tree (ii) insertion (iii) removals (iv) top

Correct

Marks for this submission: 1/1.

Question 11

Marks: 1

Consider the following infix expression.

3\*2^5-1

If one converts the above expression into postfix, what would be the resultant expression?

Choose at least one answer.

A. 3 2 \* ^ 5 1 -

B. 3 2 \* 5 1 ^ -

C. 3 2 \* 5 ^ - 1

D. 3 2 \* 5 1 - ^ correct

E. 3 \* 2 \* 5 ^ 1 -

Correct

Marks for this submission: 1/1.

Question 12

Marks: 1

Consider the following Java program segment.

public void nnnn ( Object x )

{

if (currentsize = = theArray.length )

doublequeue ();

back := increment ( back);

theArray [ back ] =x;

currentSize++;

}

Choose at least one answer.

A. insert a new element to array based stack

B. insert a new element to linked list based queue Incorrect

C. insert a new element to array based graph

D. insert a new element to linked list based stack

E. insert a new element to array based queue correct

Partially correct

Marks for this submission: 0.75/1.