

ST. LAWRENCE HIGH SCHOOL



A Jesuit Christian Minority Institution

WORKSHEET – 43

Topic : Stacks and Queue operations

Subject: COMPUTER SCIENCE Class - 12

Chapter: Programming in C: Data Structures

Choose the correct answer for each question:

- 1. A special marker called stack top pointer is used to usually indicate the position of the:
 - a. First entered data in the stack
 - b. Last entered data in the stack
 - c. Last removed data in the stack
 - d. Next data to be entered into the stack
- 2. When an array is used to create a stack, then the top index is usually initialized to:
 - a. NULL
 - b. +1
 - c. -1
 - d. 0

3. In an empty stack created using a linked list the stack top pointer will point to:

- a. +1
- b. -1
- c. 0
- d. NULL

4. When using a linked list to create a stack, which of the following functions of a linked list can be modified to form the push and pop functions respectively?

- a. append() and del_begin()
- b. add_begin() and del_begin()
- c. add_begin() and del_last()
- d. add_after() and del_after()
- 5. To insert a new value x into a stack created using a linked list, which of the following code sections is correct (temp pointer points to the new node)?
 - a. top = temp; temp -> value = x; temp -> next = top;
 - b. temp -> value = x; top = temp->next; top = temp;
 - c. temp=top; temp -> value = x; temp ->next = top;
 - d. temp -> value = x; temp ->next=top; top = temp;
- 6. The postfix form of the expression (A+B)*(C*D-E)*F / G is?

- b) AB + CD* E F **G /
- c) AB + CD* E *F *G /
- d) AB + CDE * * F *G /
- 7. What is the result of the following operation?
 - Top (Push (S, X))
 - a) X
 - b) X+S
 - c) S
 - d) XS

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15x1=15

- 8. Consider the following operation performed on a stack of size 5.
 - Push(1);
 - Pop(); Push(2);
 - Push(2), Push(3);
 - Pop();
 - Push(4);
 - Pop();
 - Pop(); Push(5);
 - After the completion of all operation, the number of elements present in stack are
 - a) 1
 - b) 2
 - c) 3
 - d) 4
- 9. If the elements "A", "B", "C" and "D" are placed in a stack and are deleted one at a time, what is the order of removal?
 - a) ABCD
 - b) DCBA
 - c) DCAB
 - d) ABDC
- 10. When using a linked list to create a queue, which of the following functions of a linked list can be modified to form the store and retrieve functions respectively?
 - a. append() and del_begin()
 - b. add_begin() and del_begin()
 - c. add_begin() and del_last()
 - d. add_after() and del_after()
- 11. When all the data are removed from a queue created using a linked list, then the front and the rear pointers change as:
 - a. if (front == rear) { front = rear;}
 - b. if (front == rear) { front =rear; rear = NULL;}
 - c. if (front == rear) { front = NULL; rear = front;}
 - d. if (front != rear) { front = NULL;}
- 12. A normal queue, if implemented using an array of size MAX_SIZE, gets full when

a) Rear = MAX_SIZE – 1

- b) Front = (rear + 1)mod MAX_SIZE
- c) Front = rear + 1
- d) Rear = front
- 13. If the elements "A", "B", "C" and "D" are placed in a queue and are deleted one at a time, in what order will they be removed?
 - a) ABCD
 - b) DCBA
 - c) DCAB
 - d) ABDC

14. In a Queue, if a user tries to remove an element from empty Queue it is called ______

- a. Overflow
- b. Empty collection
- c. Garbage collection
- d. Underflow
- 15. The following operations are performed on a queue that already has the data [5, 2, 9] store(8), store(4), retrieve(), retrieve(), store (2). What is the final state of the queue?
 - a. 9, 8, 2, 4
 - b. 2, 9, 8, 4, 2
 - c. 5, 2, 4, 2
 - d. 9, 8, 4, 2

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