ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution

FOR GOD AND COUNTRY

WORKSHEET – 43(ANSWER KEY)

Topic : Stacks and Queue operations

Subject: COMPUTER SCIENCE **Class - 12** **F.M:15**

Chapter: Programming in C: Data Structures **Date: 23/11/2020**

Choose the correct answer for each question: 15x1=15

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?
   a) AB+ CD*E – FG /**
   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

8. Consider the following operation performed on a stack of size 5.
   Push(1);
   Pop();
   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**