ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution

FOR GOD AND COUNTRY

WORKSHEET – 48 (Answer key)

Topic: Queue and its basic operations

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

Chapter: Stacks and queues **Date: 30/01/2021**

Choose the correct answer for each question: [5 X 1 = 15]

1. A linear list of elements in which deletion can be done from one end (front) and insertion can take place only at the other end (rear) is known as _____
   a) **Queue**
   b) Stack
   c) Tree
   d) Linked list
2. A queue follows _____
   a) **FIFO (First In First Out) principle**
   b) LIFO (Last In First Out) principle
   c) Ordered array
   d) Linear tree
3. Circular Queue is also known as _____
   a) **Ring Buffer**
   b) Square Buffer
   c) Rectangle Buffer
   d) Curve Buffer
4. 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
5. A data structure in which elements can be inserted or deleted at/from both ends but not in the middle is?
   a) Queue
   b) Circular queue
   c) **Dequeue**
   d) Priority queue
6. 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

7. Which of the following is not the type of queue?
   a) Ordinary queue
   b) **Single ended queue**
   c) Circular queue
   d) Priority queue
8. The data structure required for Breadth First Traversal on a graph is?
   a) Stack
   b) Array
   c) **Queue**
   d) Tree
9. Which one of the following is an application of Queue Data Structure?
   a. When a resource is shared among multiple consumers.
   b. When data is transferred asynchronously (data not necessarily received at same rate as sent) between two processes
   c. Load Balancing
   d. All of the above
10. 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
11. How many stacks are needed to implement a queue. Consider the situation where no other data structure like arrays, linked list is available to you.
    a. 1
    b. 2
    c. 3
    d. 4
12. Which of the following is true about linked list implementation of queue?
    a. In push operation, if new nodes are inserted at the beginning of linked list, then in pop operation, nodes must be removed from end.
    b. In push operation, if new nodes are inserted at the end, then in pop operation, nodes must be removed from the beginning.
    c. Both of the above
    d. None of the above
13. An array of size MAX_SIZE is used to implement a circular queue. Front, Rear, and count are tracked. Suppose front is 0 and rear is MAX_SIZE -1. How many elements are present in the queue?
    a) Zero
    b) One
    c) MAX_SIZE-1
    d) **MAX_SIZE**
14. In linked list implementation of a queue, front and rear pointers are tracked. Which of these pointers will change during an insertion into EMPTY queue?
    a) Only front pointer
    b) Only rear pointer
    c) **Both front and rear pointer**
    d) None

15. How many queues are needed to implement a stack. Consider the situation where no other data structure like arrays, linked list is available to you.
    a. 1
    b. 2
    c. 3
    d. 4

Phalguni Pramanik