

NADAR SARASWATHI COLLEGE OF ENGINEERING AND TECHNOLOGY, THENI.

Course/Branch : B.E/CSE	Year / Semester :II/III	Format No.	NAC/TLP-07a.13
Subject Code :CS8391	Subject Name :Data Structures	Rev. No.	02
Unit No :2	Unit Name :Linear Data Structures – Stacks, Queues	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1.	Process of inserting an element in stack is called _____ a) Create b) Push c) Evaluation d) Pop	L1
2.	In a stack, if a user tries to remove an element from empty stack it is called _____ a) Underflow b) Empty collection c) Overflow d) Garbage Collection	L4
3.	Pushing an element into stack already having five elements and stack size of 5, then stack becomes a) Overflow b) Crash c) Underflow d) User flow	L3
4.	Which of the following is not the application of stack? a) A parentheses balancing program b) Tracking of local variables at run time c) Compiler Syntax Analyzer d) Data Transfer between two asynchronous process	L2
5.	What is the value of the postfix expression 6 3 2 4 + - *? a) 1 b) 40 c) 74 d) -18	L3
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	L1
7.	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) $AB + CDE * - * F *G /$	L1
8.	What data structure would you mostly likely see in a non recursive implementation of a recursive algorithm? a) Linked List b) Stack c) Queue d) Tree	L3
9.	The prefix form of $A-B / (C * D ^ E)$ is?	L1

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	<p>a) -/*^ACBDE b) -ABCD*^DE c) -A/B*C^DE d) -A/BC*^DE</p>		
10.	<p>Convert the following Infix expression to Postfix form using a stack $x + y * z + (p * q + r) * s$, Follow usual precedence rule and assume that the expression is legal.</p> <p>a) $xyz*+pq*r+s*+$ b) $xyz*+pq*r+s+*$ c) $xyz+*pq*r+s*+$ d) $xyzp+**qr+s*+$</p>	L2	
11.	<p>Which of the following statement(s) about stack data structure is/are NOT correct?</p> <p>a) Linked List are used for implementing Stacks b) Top of the Stack always contain the new node c) Stack is the FIFO data structure d) Null link is present in the last node at the bottom of the stack</p>	L4	
12.	<p>What does the following function check for? (all necessary headers to be included and function is called from main)</p> <pre style="background-color: #f0f0f0; padding: 10px;"> #define MAX 10 typedef struct stack { int top; int item[MAX]; }stack; int function(stack *s) { if(s->top == -1) return 1; else return 0; } </pre> <p>a) full stack b) invalid index c) empty stack d) infinite stack</p>	L2	
13.	<p>Consider these functions: push() : push an element into the stack pop() : pop the top-of-the-stack element top() : returns the item stored in top-of-the-stack-node What will be the output after performing these sequence of operations</p> <pre style="background-color: #f0f0f0; padding: 10px;"> push(20); push(4); top(); pop(); pop(); pop(); </pre>	L2	

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		<pre>push(5); top();</pre> <p>a) 20 b) 4 c) stack underflow d) 5</p>	
14.		<p>Which of the following data structures can be used for parentheses matching?</p> <p>a) n-ary tree b) queue c) priority queue d) stack</p>	L1
15.		<p>Minimum number of queues to implement stack is _____</p> <p>a) 3 b) 4 c) 1 d) 2</p>	L1
16.		<p>What is the other name for a postfix expression?</p> <p>a) Normal polish Notation b) Reverse polish Notation c) Warsaw notation d) Infix notation</p>	L3
17.		<p>What is the result of the following postfix expression? ab*cd*+ where a=2,b=2,c=3,d=4.</p> <p>a) 16 b) 12 c) 14 d) 10</p>	L3
18.		<p>Which of the following properties is associated with a queue?</p> <p>a) First In Last Out b) First In First Out c) Last In First Out d) Last In Last Out</p>	L2
19.		<p>In a circular queue, how do you increment the rear end of the queue?</p> <p>a) rear++ b) (rear+1) % CAPACITY c) (rear % CAPACITY)+1 d) rear-</p>	L2
20.		<p>What is the need for a circular queue?</p> <p>a) effective usage of memory b) easier computations c) to delete elements based on priority d) implement LIFO principle in queues</p>	L1
21.		<p>n linked list implementation of queue, if only front pointer is maintained, which of the following operation take worst case linear time?</p> <p>a) Insertion b) Deletion c) To empty a queue</p>	L3

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	d) Both Insertion and To empty a queue	
22.	In linked list implementation of a queue, where does a new element be inserted? a) At the head of link list b) At the centre position in the link list c) At the tail of the link list d) At any position in the linked list	L2
23.	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) No pointer will be changed	L4
24.	Circular Queue is also known as _____ a) Ring Buffer b) Square Buffer c) Rectangle Buffer d) Curve Buffer	L1
25.	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	L3
26.	Queues serve major role in _____ a) Simulation of recursion b) Simulation of arbitrary linked list c) Simulation of limited resource allocation d) Simulation of heap sort	L1
27.	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	L2
28.	Which of the following is not an application of priority queue? a) Huffman codes b) Interrupt handling in operating system c) Undo operation in text editors d) Bayesian spam filter	L5
29.	Which of the following is not an advantage of priority queue? a) Easy to implement b) Processes with different priority can be efficiently handled c) Applications with differing requirements d) Easy to delete elements in any case	L1
30.	What is a dequeue? a) A queue with insert/delete defined for both front and rear ends of the queue b) A queue implemented with a doubly linked list c) A queue implemented with both singly and doubly linked lists	L4

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	d) A queue with insert/delete defined for front side of the queue	
31.	What are the applications of dequeue? a) A-Steal job scheduling algorithm b) Can be used as both stack and queue c) To find the maximum of all sub arrays of size k d) To avoid collision in hash tables	L4

