UNIT-3 Stack &Queue Question bank

Que. No.	Questions
1	Stack is a _____ data structure LILO LIFO FIFO None of these ANS :B
2	User pushes 1 element into the stack already having 5 elements & stack size with 5, then stack becomes _____ Crash User flow Overflow Underflow Ans :C

3	The process of inserting an element in a stack is called as _____ Create Evaluate Pop Push D
4	**The process of removing an element in a stack is called as _____** **Push Create Postfix expression Pop D**
5	**"consider stack is implemented using stack** **#define MAX 10** **Class stack** **{** **int arr[MAX];** **int top=-1** **};** **In this implementation, the maximum value of top which cannot cause overflow is** **"** **A any other** **B 11**

	C 9 **D 10** **Ans :C**
6	Data structure needed for reversing a string Queue Pointer Stack Heap Ans :C
7	Data structure needed for decimal to binary conversion Queue Pointer Stack Array Ans :C

8	Data structure needed for infix to postfix expression conversion Queue Pointer Stack Heap Ans :C
9	Stack cannot be used for Evaluation of expression in postfix form Resource allocation & scheduling Reversing string Implementation of strings Ans :B
10	before poping an element from a stack one should check empty condition full condition both a and b either a or b Ans :A

11	an empty condition in stack is signaled by top==MAX-1 top==MAX top== -1 None of these C
12	Infix to postfix of (a+b)*(c-d) A abc-d+* B ab+cd-* C a-bcd+* D ab+*cd- Ans : B
13	Infix to prefix of (a+b)*(c-d) A +*ab-cd B *+ab-cd C *+-abcd D *+a-bcd Ans :B

14	Evaluate the following postfix expression: (4 5 + 7 2 - *) A 40 B 42 C 45 D41 Ans :C
15	evaluate the following prefix expression: (+ - * 2 3 4 5) A 5 B 6 C 7 D 8 Ans : C
16	Evaluate the following postfix expression: (6 5 3 + 9 * +) A 58 B 78 C 90 D 68 Ans :B

17	evaluate the following prefix expression: (- * 2 + 3 4 5) A 10 B 9 C 8 D 7 Ans :B
18	when two stacks are implemented in the same array then _____ A both should grow in the forward direction B both should grow in the backward direction C both should grow in the opposite direction so that the vacant area can be used by both D none of these Ans :C
19	time complexity of push operation on a stack is: A O(1) B O(n) C O(log n) D O(n2) Ans : A

20	time complexity of pop operation on a stack is: A O(1) BO(n) C O(log n) D O(n2) Ans :A
21	which data structure is best suited for the UNDO operation in windows A stack B queue C both stack & queues D arrays Ans : A
22	data structure used for DFS traversal on a tree is : A stack B queue C linked list D array Ans :A

23	which expression is free from precedence? A prefix B postfix C Fully parenthesized D All of these Ans : D
24	Evaluate the postfix expression 623+-382/+*2^3+ A 52 B 50 C 32 D 38 Ans :A
25	convert the following expression to postfix form (((a^b)*c+(d*(e/f))) A ab^c*def/*+ B ab^c*d*ef/+ C abc^*def/*+ D None of these Ans : A

26	convert the following expression to postfix form A+B/C*D-E A ABC/D*+E- B AB+C/D*E- C ABC/D*E+- B None of these Ans : A
27	Which of the following stack operations could result in stack underflow? A is_empty B pop C push D Two or more of the above answers Ans :B
28	match the left and right parentheses in a character string (a*(b+c)+d) A (1,10),(4,7) B (3,7), (0,10) C (0,7), (3,10) D none of these Ans : B

29	Output pairs (u,v) such that the left parenthesis at position u is matched with the right parenthesis at v using stacks. (((a+b)*c+d-e)/(f+g)-(h+j)*(k-1))/(m-n) A (2,6) (1,13) (15,19) (21,25) (27,31) (0,32) (34,38) B (0,32) (1,13) (2,6) (15,19) (21,25) (27,31) (34,38) C (2,6) (1,13) (21,25) (15,19) (27,31) (0,32) (34,38) D None of these Ans :A
30	Following sequence of operations is performed on a stack PUSH(10) PUSH(11) PUSH(12) POP() POP() PUSH(13) POP() POP() The sequence of value popped out is A 12 11 13 10 B 10 11 12 13 C 13 12 11 10 D 12 11 10 13 Ans :A
31	Find the postfix expression of the following logical expression A || B && !C A A B C ! && || B A B && C ! | C A B C ! || && D None of these Ans :A

32	convert from postfix to infix : 4 2 $ 3 * 3 - 8 4 / 1 1 + / + A 4 $ 2 - 3 * 3 + 8 / 4 / 1 + 1 B 4 $ 2 * 3 - 3 + 8 / 4 / 1 + 1 C 4 $ 2 * 3 - 3 / 8 + 4 / 1 + 1 D 4 * 2 $ 3 - 3 + 8 / 4 / 1 + 1 Ans :B
33	"In In-fix to post-fix conversion the complexity of the function in_to_post_convert() is of the order of _____ where n is the number of tokens in the expression A O(1) B O(n) C O(n2) D none of these Ans :B
34	Which is the correct statement for the following piece of code with reference to stack int item[MAX], bottom=-1 ; item[++bottom] = 10; A error B PUSH operation C POP operation D Non of these Ans :B

35	Int fact(int N)
	{
	if(N==0) return(1);
	Else
	return(N* fact(N-1));
	}
	In above code snippet which type of stack is used
	A implicit stack
	B Explicit stack
	C Stack is not used
	D none of these
	Ans :A

36	"Following is a pseudo code of a series of operations on stack S and stack T
	X:=10;
	while not EMPTYSTACK(S) do
	X = POP(S);
	PUSH(T,X);
	end
	PRINT(X);
	while not EMPTYSTACK(T) do
	Y = POP(T);
	PUSH(S,Y);

	end What is the output of the code" A Assign X to the bottom element of the stack S leaving the stack unchanged B Assign X to the bottom element of the stack S leaving the stack empty C Assign X to the nth element of the stack S leaving the stack unchanged D None of the above Ans :A
37	After deletion of an element from the queue, the front pointer becomes A front=front+1 B front=front-1 C front=front+2 D front=front-2 Ans :A 1
38	which of the following data structure may give overflow error, even through the current number of element in it is less than its size? A simple queue B circular queue C stack D None of these Ans :A

39	The result of deletion from an empty queue will cause A underflow B overflow C exception D None of these Ans :A
40	The result of insertion in a full queue will cause A underflow B overflow C exception D None of these Ans B
41	A circular queue is implemented in an array data [ ] of size MAX. Two pointers rear and front are maintained , on insertion of an element, rear will become A rear= rear+1 B rear= rear- 1 C rear= (rear+1)%MAX D rear= (rear-1)%MAX Ans :C

42	A circular queue is implemented in an array data [ ] of size MAX. Two pointers rear and front are maintained , on deletion of an element, front will become A front= front+1 B front= front-1 C front= (front+1)%MAX D front= (front-1)%MAX Ans :C
43	In a priority queue element is always inserted at the rear end , then the deletion must be from A front end B rear end C anywhere D None of these Ans : C
44	In a priority queue, element is inserted as pe its priority, then the deletion must be from A front end B rear end C anywhere D None of these Ans :A

45	A dequeue is a variation of A stack B Queue C both stack and queue D None of these Ans :C
46	A dequeue is implemented most efficiently using A singly linked list B simply circular linked list both (a) and (b) D doubly linked list Ans :D
47	One difference between a queue and a stack is: A Queues require dynamic memory, but stacks do not. B Stacks require dynamic memory, but queues do not. C Queues use two ends of the structure; stacks use only one. D Stacks use two ends of the structure, queues use only one. Ans :C
48	Suppose we have a circular array implementation of the queue class, with ten items in the queue stored at data[2] through data[11]. The CAPACITY is 42. Where does the EQUEUE member function place the new entry in the array? A data[1] B data[2]

	C data[11] D data[12] Ans :D
49	In the linked list implementation of the queue class, where does the push member function place the new entry on the linked list? A At the head B At the tail C After all other entries that are greater than the new entry D After all other entries that are smaller than the new entry. Ans :C
50	If data is a circular array of CAPACITY elements, and last is an index into that array, what is the formula for the index after last? A (last % 1) + CAPACITY B last % (1 + CAPACITY) C (last + 1) % CAPACITY D last + (1 % CAPACITY) Ans :C
51	I have implemented the queue with a circular array, keeping track of first, last, and count (the number of items in the array). Suppose first is zero, and last is CAPACITY-1. What can you tell me about count? A count must be zero. B count must be CAPACITY. C count could be zero or CAPACITY, but no other values could occur. D None of the above.

	Ans :B
52	I have implemented the queue with a linked list, keeping track of a front pointer and a rear pointer. Which of these pointers will change during an insertion into a NONEMPTY queue? A Neither changes B Only front_ptr changes. C Only rear_ptr changes. D Both change. Ans : C
53	I have implemented the queue with a linked list, keeping track of a front pointer and a rear pointer. Which of these pointers will change during an insertion into an EMPTY queue? A Neither changes B Only front_ptr changes. C Only rear_ptr changes. D Both change. Ans : D
54	Suppose top is called on a priority queue that has exactly two entries with equal priority. How is the return value of top selected? A The implementation gets to choose either one. B The one which was inserted first. C The one which was inserted most recently

	D This can never happen (violates the precondition) Ans :D
55	A data structure where elements can be added or removed at either end but not in the middle is called _____. A linked lists B Stacks C Queues D dequeue Ans :D
56	If the characters 'D', 'C', 'B', 'A' are placed in a queue (in that order), and then removed one at a time, in what order will they be removed? A ABCD B ABDC C DCAB D DCBA Ans :D

57	Are there any dynamic memory management errors in the following code?
	int *p = new int;
	int *q = new int;
	int *r;

	*p = 17;
	r = q;
	*q = 42;
	p = q;
	delete r; "
	A No, there are no errors
	B Yes, a memory leak
	C Yes, misuse of a dangling pointer
	D Yes, both a memory leak and misuse of a dangling pointer
	Ans :B

58	A circular array queue with space for 10 elements in which front =6 and rear=9, insertion of next element will take place at position: A 0 B 7 C 5 D can not take place due to overflow situation Ans :A

59	following code denotes…….operation
	int something()
	{
	int item;
	item=Q.que[Q .front];
	Q .front++;
	cout<< item;

	return Q .front; } A insertion in queue B deletion from queue C pushing onto the stacking D popping off stack Ans :B

60	consider the following code,
	Q. front=-1; Q. rear=-1;
	insertq(3); insertq(5);
	insertq(9);
	cout<< deletq();//d1
	insertq(12); insertq(40);
	cout<<deletq();//d2
	cout<<deletq();//d3
	insertq(11); insertq(10);
	after the code above executes, how many elements would remain in q?
	A 0
	B 2
	C 3
	D 4
	Ans :D

61	consider the following code,
	Q. front=-1; Q. rear=-1;
	insertq(3); insertq(5);
	insertq(9);
	cout<< deletq();//d1
	insertq(12); insertq(40);
	cout<<deletq();//d2
	cout<<deletq();//d3
	insertq(11); insertq(10);
	what will be the value returned by the last cout(d3 comment) statement?"
	A 3 B 5 C 9 D 40 Ans :C

62	consider the following code,
	Q. front=-1; Q. rear=-1;
	insertq(3); insertq(5);
	insertq(9);
	cout<< deletq();//d1
	insertq(12); insertq(40);
	cout<<deletq();//d2
	cout<<deletq();//d3
	insertq(11); insertq(10);
	if replace all cout statement by insert(deletq())then queue will contain elements in following order…
	A 3, 5, 9, 12, 40, 11, 10
	B 3, 12 , 40 , 5 ,9 ,11 ,10

	C 3, 5, 12, 40, 9, 11, 10 D none of these Ans :B
63	suppose we have circular queue with 8 items in the queue stored at data[2] through data [9]. The size is 10, where does the add member function place the new entry in the array? A data[0] B data[1] C data[10] D none of these Ans :A
64	consider a deque _,_,_,10,20,30,40,_,_,_. The front=3,rear=6,there are some operations that that are performed on this deque. These operations are 9 added at front,50 is added at rear,60 is added at rear, then 2elements are deleted from front. finally 70 is added at rear choose the correct option A front=3, rear=7 B front=4, rear=7 C front=4, rear=8 D front=4, rear=9 Ans :D

65	consider the following circular queue : - - A D - -, front =2, rear =3. describe the queue after insertion of E,F,G and deletion of two elements. A G - - - E F B E F G - - - C E F - - G - D None of these Ans :A
66	consider circular queue of characters & is of size 6. ""-"" denotes an empty queue location. What are the contents of queue after performing all following operationsi) S is added ii) two letters deleted iii) two letters deleted Initial condition: F=2, R=4, Queue= - , A , C, D, -, - A -, -, -, D,S, - B -, -, -, D, -, - C Empty D None of these Ans :C
67	consider circular queue of characters & is of size 5. ""-"" denotes an empty queue location. What are the contents of queue after performing all following operations i) one letter deleted ii) R is added iii)K, L, M addedInitial condition: F=2, R=4, Queue= - , A , C, D, - A L, A C, D, R B L, -, -, D,R C L, K -, D, R D Overflow

	Ans :D
68	Consider the following circular double ended queue of characters of size 6. F=1, R= 3, Initial condition: - , 5, 9, 6, - , - . Show the position of Front & Rear after following operations: i) added 2 at rear end ii) one letter deleted from front end A F= 3, R= 1 B F= 2 , R= 4 C F= 1, R= 4 D none of these Ans : B
69	Consider the following circular double ended queue of characters of size 6. F=4, R= 2, Initial condition: K, A, C, - , R , L. Show the dequeue content after following operations: i) S is added at rear end ii) T is added at rear end A Overflow B Underflow C F= 1, R= 4

	D none of these Ans :A
70	Consider the following circular double ended queue of characters of size 6. F=4, R= 2, Initial condition: K, A, C, - , M , L Show the position of Front & Rear after following operations: i) One letter deleted from front end ii) R is added at front end A F= 3, R= 1 B F= 4 , R= 2 C F= 1, R= 4 D none of these Ans :B
71	Consider the following circular double ended queue of characters of size 6. F=1, R= 3, Initial condition: - , A, C, D, - , - . Show the position of Front & Rear after following operations: i) F is added at rear end ii) Two letters deleted from rear end iii) K, L, M added to front end. A F= 3, R= 1 B F= 4 , R= 2

	CF= 1, R= 4 D none of these Ans :B
71	consider circular queue of characters & is of size 6. ""-"" denotes an empty queue location.What are the contents of queue after performing all following operations. i)F is added ii) two letters deleted iii)K, L, M added Initial condition: F=2, R=4, Queue= - , A , C, D, -, - A L , M, -, D, F, K B K, L, M, D, F, - C L, M, -, -,F, K D None of these Ans :A
72	circular queue of characters & is of size 5. ""-"" denotes an empty queue location. What are the contents of queue after performing all following operations i) R is added ii) two lettres deleted iii) S is added Initial condition: F=2, R=4, Queue= - , A , C, D, - A Empty B S, -, -, D,R C S, -, -,-,R D None of these Ans :B

73	consider circular queue of characters & is of size 6. ""-"" denotes an empty queue location.What are the contents of queue after performing all following operations i) two letters deleted ii)K, L, M added iii) two letters deleted . Initial condition: F=2, R=4, Queue= - , A , C, D, -, - A M, -, -, -, -, L B L, M, -, -, -, -K, C L, M, D, -, - D None of these Ans :A
74	consider circular queue of characters & is of size 6. ""-"" denotes an empty queue location. What are the contents of queue after performing all following operations i) two letters deleted ii)K, L, M added iii) two letters deleted. Initial condition: F=3, R=4, Queue= - , - , C, D, -, - A L, -, -, -, -, MK, B L, M, -, -, - C -, -, M, -,-, - D Empty Ans :C
75	consider circular queue of characters & is of size 5. ""-"" denotes an empty queue location. What are the contents of queue after performing all following operations) K, L, M added ii) two letters deleted iii) R is added. Initial condition: F=2, R=4, Queue= - , A , C, D, - A L, R, C, D, R B L, -, -, D,K C L, R, -, D, K D None of these Ans : C