1. Convert the given infix expression to postfix expression

m^n/(3*t)+6

A. m n ^ 3 z * / 6 +

B. * / m n ^ 5 t + 6

C. m n ^ 3 t * / 6 +

D. * / + m n t ^ 3 6

Answer: C

2. Convert the given infix expression to prefix

(3*5^2/15)-(5-2^2)

A. - / * 3 5 2 15 – 5 ^ 2 ^ 2

B. - - / * 3 ^ 5 2 15 5 ^ 2 2

C. - * / - 3 5 2 15 ^ 5 ^ 2 2

D. - / * 3 ^ 5 2 15 - 5 ^ 2 2

Answer: D

3. Consider the following sequence of operations on an empty stack.

push(1054);

push(5020);

pop();

push(2535);

push(1620);

s=pop();

Consider the following sequence of operations on an empty queue.

enqueue(3213);

enqueue(2234);

dequeue();

enqueue(5282);

enqueue(3332);

q=dequeue();

The value of s+q is _____.

A. 3854

B. 4833

C. 6902

D. 4952

Answer: A

Explanation: Let’s construct an empty stack and do the operations. Stack follows LIFO order.

1.Push(1054) // (1054)

2.Push(5020) // (1054,5020)

3.Pop() // (1054)

4.Push(2535) //(1054,2535)

5.Push(1620) //(1054,2535,1620)

6.s=pop() // (1054,2535)

s=1620;

Let’s construct an empty queue and do the operations. Queue follows FIFO order.

1.Enqueue(3213) // [3213]

2.Enqueue(2234) // [3213, 2234]

3.Dequeue() // [2234]

4.Enqueue(5282) // [2234,5282]

5.Enqueue(3332) // [2234,5282, 3332]

6.q=Dequeue() // [5282, 3332]

q=2234;

s+q=1620+2234

So, s+q=3854 .

4. Assume you are implementing two stacks using an array of size N, initially, top of stack-1 is T1 points to index-0, top of stack-2 is T2 points to index-(N-1). Each time you are adding one element to both the stacks, what is the condition to say “stack is full” and the array space is to be used effectively.

A. (T1 = N/2) and (T2 = N/2+1)

B. T1 + T2 = N

C. (T1= N/2) or (T2 = N)

D. T1= T2 -1

Answer: D

Explanation:

If we are to use space efficiently then size of the any stack can be more than N/2. Both stacks will grow from both ends and if any of the stack top reaches near to the other top then stacks are full. So the condition will be T1 = T2 -1 (given that T1< T2)

5. Three elements P, Q, R pushed into Stack-A in the following order, R, Q, P. There is another Stack-B. You can pop an element E from Stack-A, you can display E or push E to Stack-B. You can pop an element F from Stack-B, you can only display E. By following these terms, which of the following permutation of P,Q,R is not possible?

A QPR

B QRP

C RPQ

D PQR

Answer: C

Explanation:

Option (A):

Pop P from stack A

Push P to stack B

Print Q

Print P from stack B

Print R from stack A

Order = Q P R

Option (B):

Pop P from stack A

Push P to stack B

Print Q from stack A

Print R from stack A

Print P from stack A

Order = Q R P

Option (C):

Pop P from stack A

Push P to stack B

Pop Q from stack A

Push Q to stack B

Print R from stack A

Now, printing a will not be possible.