



ST. LAWRENCE HIGH SCHOOL

A Jesuit Christian Minority Institution



WORKSHEET – 47 (Answer key)

Topic: Applications of Stacks

Subject: COMPUTER SCIENCE

Class - 12

F.M:15

Chapter: Stacks and Queues

Date: 23/01/2021

Choose the correct answer for each question:

[5 X 1 = 15]

1. How many stacks are required for applying evaluation of infix expression algorithm?
a) one
b) **two**
c) three
d) four
2. How many passes does the evaluation of infix expression algorithm makes through the input?
a) **One**
b) Two
c) Three
d) Four
3. Identify the infix expression from the list of options given below.
a) **a/b+(c-d)**
b) $abc * + d + ab + cd + * ce - f -$
c) $ab - c -$
d) $+ ab$
4. Which of the following statement is incorrect with respect to evaluation of infix expression algorithm?
a) Operand is pushed on to the stack
b) **If the precedence of operator is higher, pop two operands and evaluate**
c) If the precedence of operator is lower, pop two operands and evaluate
d) The result is pushed on to the operand stack
5. Of the following choices, which operator has the lowest precedence?
a) ^
b) +
c) /
d) **#**
6. What is the value of the postfix expression $6\ 3\ 2\ 4\ +\ -\ *?$
a) 1
b) 40
c) 74
d) **-18**

7. 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?
- 1
 - 2
 - 3
 - 4
8. The postfix form of the expression $(A + B) * (C * D - E) * F / G$ is?
- $AB + CD * E - FG / **$
 - $AB + CD * E - F ** G /$
 - $AB + CD * E - * F * G /$
 - $AB + CDE * - * F * G /$
9. The data structure required to check whether an expression contains a balanced parenthesis is?
- Stack
 - Queue
 - Array
 - Tree
10. What data structure would you mostly likely see in non recursive implementation of a recursive algorithm?
- Linked List
 - Stack
 - Queue
 - Tree
11. The postfix form of $A * B + C / D$ is?
- $* AB / CD +$
 - $AB * CD / +$
 - $A * BC + / D$
 - $ABCD + / *$
12. Evaluate the following and choose the correct answer.
 $a/b + c * d$ where $a=4, b=2, c=2, d=1$.
- 1
 - 4
 - 5
 - 2
13. Using the evaluation of infix expression, evaluate $a^b + c$ and choose the correct answer.
 $(a=2, b=2, c=2)$
- 12
 - 8
 - 10
 - 6

14. Evaluate the following infix expression using algorithm and choose the correct answer.

$a+b*c-d/e^f$ where $a=1$, $b=2$, $c=3$, $d=4$, $e=2$, $f=2$.

- a) 6
- b) 8
- c) 9
- d) 7

15. Which data structure is needed to convert infix notation to postfix notation?

- a) Branch
- b) Tree
- c) Queue
- d) Stack

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