

Data Structure: Array, Stack and Queue

Convert the following infix expressions to postfix expressions

1. $((x*y - a*b) - d/f) + a) * b$
2. $(a + (((b - (c*d - e) + f) / g)) * (h - j))$
3. $A + B * (P + Q)^C / D$
4. $A + B - C * D + F - G$
5. $A^B - A / (B * (A - B - A * D) / B)$
6. $A + (((B - C) * (D - E) + F / G)^{(H - J)})$
7. $(A + B) * (C^{(D - E)} + F - G)$
8. $A * (B + (C + D) * (E + F) / G) * H$
9. $A * (B + C) / D - E - (F + G / H)$
10. $A + B * C^D - (E / F - G)$
11. $A - B + C * D^E * G / H$
12. $((A + B) - ((C * D)^E / F)) * G$
13. $(TRUE \ \&\& \ FALSE) \ || \ (FALSE \ || \ TRUE)$
14. $(A + B * C) / D + E / (F * G + H / I)$
15. NOT A OR NOT B AND NOT C

Evaluate the following postfix expression E given below, show the contents of the stack during the evaluation

16. $E = 10, *, 15, -, 25, 5, /, 2, +$
17. $E = 7, 6, 2, ^, *, 18, +$
 $E = 5, 9, +, 2, *, 4, 1, 1, 3, , *, -$
18. $E = 120, 45, 20, +, 25, 15, -, +, *$
19. TRUE FALSE TRUE FALSE NOT OR TRUE OR AND
20. $E = 30, 5, 2, ^, 12, 6, /, +, -$
21. $15, 3, 2, +, /, 7, +, 2, *$
22. $25, 8, 3, -, /, 6, *, 10, +$
23. $AB - CD + E * +$ WHERE $A = 5, B = 3, C = 5, D = 4$ AND $E = 2$
24. $7, 6, +, 8, *, 2, -, 3, *, 2, 4, *, -,$
25. $8, 7, +, 9, 8, +, -, 2, /, 3, 4, * 2, / +$
26. $E = 5, 20, 15, -, *, 25, 2, *, +$
27. IF $A = 2, C = 3, D = 2, E = 5, F = 4, G = 6$
 $EFG^D * AC / - +$