

Assignment Day 3

Ques 4. Evaluate following Prefix expressions.

(i) +, -, 20, *, 3, 4, 1

| |
|---|
| 3 |
| 4 |
| 1 |

 3×4

| |
|----|
| 20 |
| 12 |
| 1 |

 $20 - 12$

| |
|---|
| 8 |
| 1 |

 $8 + 1$

| |
|---|
| 9 |
|---|

Ans

(ii) -, *, 3, +, 3, 7, /, ^, 4, 2, 2

| |
|---|
| 4 |
| 2 |
| 2 |

 4^2

| |
|----|
| 16 |
| 2 |

 $16 / 2$

| |
|---|
| 3 |
| 7 |
| 8 |

 $3 + 7$

| |
|----|
| 3 |
| 10 |
| 8 |

 3×10

| |
|----|
| 30 |
| 8 |

 $30 - 8$

| |
|----|
| 22 |
|----|

Ans

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

| |
|---|
| 2 |
| 2 |

 2^2

| |
|---|
| 5 |
| 4 |

 $5 - 4$

| |
|----|
| 5 |
| 2 |
| 15 |
| 1 |

 5^2

| |
|----|
| 3 |
| 25 |
| 15 |
| 1 |

 3×25

| |
|----|
| 75 |
| 15 |
| 1 |

 $75 / 15$

| |
|---|
| 5 |
| 1 |

 $5 - 1$

| |
|---|
| 4 |
|---|

Ans

(iv) +, -, +, /, *, 2, 20, 2, *, +, 3, 4, ^, 3, 2, 6, 15

| |
|----|
| 3 |
| 2 |
| 6 |
| 15 |

 3^2

| |
|----|
| 3 |
| 4 |
| 9 |
| 6 |
| 15 |

 $3 + 4$

| |
|----|
| 7 |
| 9 |
| 6 |
| 15 |

 9×7

| |
|----|
| 2 |
| 20 |
| 2 |
| 63 |
| 6 |
| 15 |

 20×2

| |
|----|
| 40 |
| 2 |
| 63 |
| 6 |
| 15 |

 $40 / 2$

| |
|----|
| 20 |
| 63 |
| 6 |
| 15 |

 $20 + 63$

| |
|----|
| 83 |
| 6 |
| 15 |

 $83 - 6$

| |
|----|
| 77 |
| 15 |

 $77 + 15$

| |
|----|
| 92 |
|----|

Ans

(v) $\times, 5, -, \wedge, 6, 2, 2$

$$\begin{array}{|c|} \hline 6 \\ \hline 2 \\ \hline 2 \\ \hline \end{array}$$

6^2

$$\begin{array}{|c|} \hline 36 \\ \hline 2 \\ \hline \end{array}$$

$36 - 2$

$$\begin{array}{|c|} \hline 5 \\ \hline 34 \\ \hline \end{array}$$

34×5

$$\begin{array}{|c|} \hline 170 \\ \hline \end{array}$$

Ans

⑤ Convert following infix expression to postfix.

(i) $x^y / (5 \times z) + 2$

$$\begin{array}{|c|} \hline \wedge \\ \hline \end{array} \quad \begin{array}{|c|} \hline \cancel{\times} \\ \hline (\\ \hline / \\ \hline \end{array} \quad \begin{array}{|c|} \hline + \\ \hline \end{array}$$

Postfix expression $\rightarrow x y ^ 5 z \times / 2 +$

(ii) $K + L - M \times N + (O \wedge P) \times W / U / V \times T + Q$

$$\begin{array}{|c|} \hline + \\ \hline \end{array} \quad \begin{array}{|c|} \hline - \\ \hline \end{array} \quad \begin{array}{|c|} \hline \wedge \\ \hline (\\ \hline + \\ \hline \end{array} \quad \begin{array}{|c|} \hline \times \\ \hline + \\ \hline \end{array} \quad \begin{array}{|c|} \hline / \\ \hline \end{array} \quad \begin{array}{|c|} \hline / \\ \hline \end{array} \quad \begin{array}{|c|} \hline \times \\ \hline \end{array} \quad \begin{array}{|c|} \hline + \\ \hline \end{array}$$

Postfix expression $\rightarrow K L + M N \times - O P ^ W \times + U / V / T \times Q +$

(iii) $A + (B \times C + D) / E$

$$\begin{array}{|c|} \hline \times \\ \hline (\\ \hline + \\ \hline \end{array} \quad \begin{array}{|c|} \hline + \\ \hline (\\ \hline + \\ \hline \end{array} \quad \begin{array}{|c|} \hline / \\ \hline + \\ \hline \end{array}$$

Postfix expression $\rightarrow A B C \times D + E / +$