Semester

VI

Subject Code

CS603 (C)

Subject Name

Compiler Design

Unit-5

Topic: Syntax Tree

As Per
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New Scheme Based on AICTE Flexible Curricula
Computer Science and Engineering

SIRT
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9001-2008 ISO Certified Institute of MP

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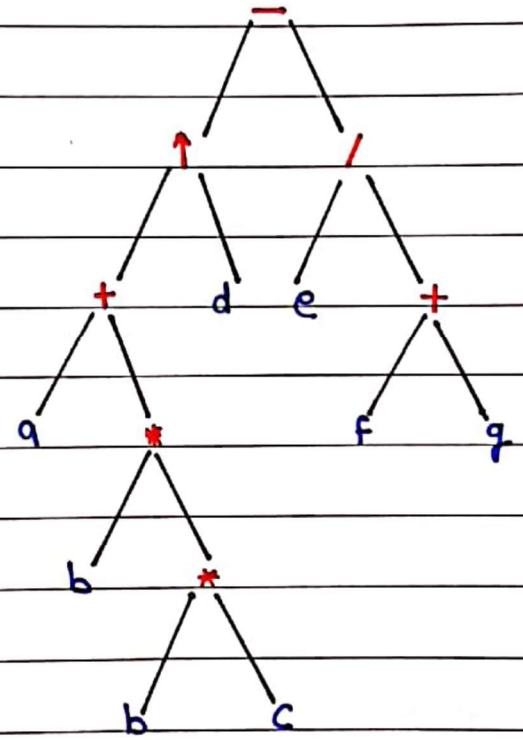
Question- Construct syntax tree and postfix notation for the following expression-

$$(a + b*(b * c)) \uparrow d - e/(f+g)$$

Solution-

SYNTAX TREE- The syntax tree for the given expression is-



Syntax-Tree

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POSTFIX NOTATION-

The given expression is-

$(a + b * (b * c)) \uparrow d - e / (f + g)$

$= (a + b * (bc*)) \uparrow d - e / (f+g)$

let $T_1 = bc*$

$= (a + b * (T_1)) \uparrow d - e / (f+g)$

$= (a + bT_1*) \uparrow d - e / (f+g)$

$T_2 = bT_1*$

$= (a + T_2) \uparrow d - e / (f+g)$

$= (aT_2+) \uparrow d - e / (fg+)$

$T_3 = aT_2+$ & $T_4 = fg+$

$= T_3 \uparrow d - e / T_4$

$= T_3 d \uparrow - e T_4 /$

$= T_3 d \uparrow e T_4 / -$

Now, put the values of T_4, T_3, T_2 & T_1 respectively -

$= T_3 d \uparrow efg+/-$

$= aT_2+d \uparrow efg+/-$

$= abT_1*+d \uparrow efg+/-$

$= abbc**+d \uparrow efg+/-$ ANSWER

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