submitted by :- Aneeket Mangal
2019CSB1071

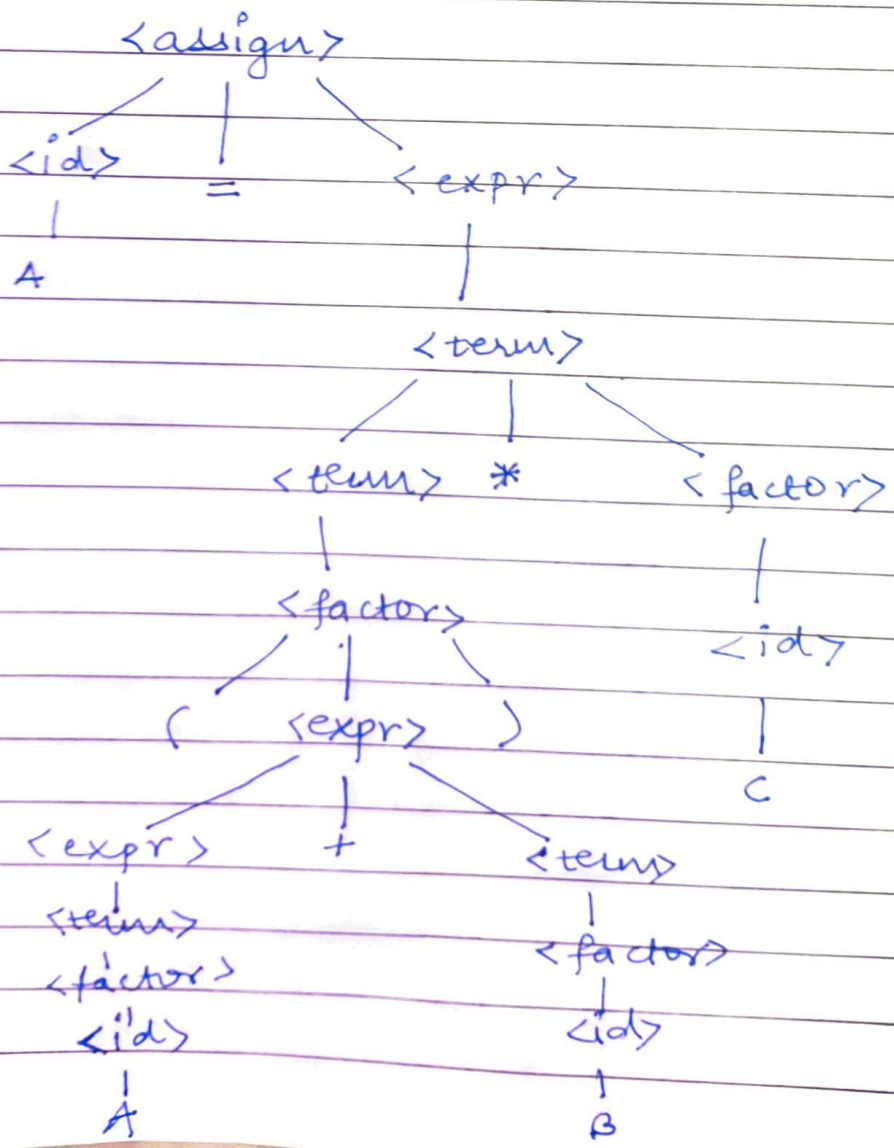
Written Assignment - I
CS202

Q1

i) <assign> → <id> = <expr>
<id> → A | B | C
<expr> → <expr> * <term>
| <term>

<term> → <factor> + <term> | <factor>
<factor> → (<expr>) | <id>

ii) a) Parse tree



b) left most derivation

<assign> → <id> = <expr>

⇒ A = <expr>

⇒ A = <term>

⇒ A = <term> * <factor>

⇒ A = <factor> * <factor>

⇒ A = (<expr>) * <factor>

⇒ A = (<expr> + <term>) * <factor>

⇒ A = (<term> + <term>) * <factor>

⇒ A = (<factor> + <term>) * <factor>

⇒ A = (<id> + <term>) * <factor>

⇒ A = (A + <term>) * <factor>

⇒ A = (A + <factor>) * <factor>

⇒ A = (A + <id>) * <factor>

⇒ A = (A + B) * <factor>

⇒ A = (A + B) * <id>

⇒ A = (A + B) * C

Q2

i) switch statement in C

<switch> → switch '(' <expr> ')' '{'

{ case <case-literal> : {<stmt>} }

[default : {<stmt>}]

'}'

ii) Java class header statement

<header> → [public] [(final | abstract)] class
<class_id> [extends <class_id>]

['implements <class_id> {, <class_id>}]