## **GROUP-8**

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## FIRST:

<moduleDeclarations> ε, DECLARE

<moduleDeclaration> DECLARE

<otherModules> ε, DEF

<driverModule> DRIVERDEF

<module> DEF

<ret> RETURNS, ε

<input\_plist\_lr> COMMA, ε

<input\_plist> ID

<output\_plist\_Ir> COMMA, ε

<output\_plist> ID

<datatype> INTEGER, REAL, BOOLEAN, ARRAY

<type> INTEGER, REAL, BOOLEAN

<moduleDef> START

<statements> ε, GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH

<ioStmt> GET\_VALUE, PRINT

<var> ID, NUM, RNUM

<whichId> SQBO, ε

<assignmentStmt> ID

<lvalueIDStmt> ASSIGNOP

<lvalueARRStmt> SQBO

<index> NUM, ID

<moduleReuseStmt> USE, SQBO

<optional> SQBO, ε

<idList\_lr> COMMA, ε

<idList> ID

<opt\_expr\_lr>  $\epsilon$ , AND, OR

<one\_more\_opt> ε, LT, LE, GT, GE, EQ, NE

<booleanConst> true, false

<arithmeticExpr\_lr>  $\epsilon$ , PLUS, MINUS

<term\_lr>  $\epsilon$ , MUL, DIV

<factor> BO, ID, NUM, RNUM, PLUS, MINUS

<op> PLUS, MINUS, MUL, DIV

<op1> PLUS, MINUS

<op2> MUL, DIV

logicalOp> AND, OR

<relationalOp> LT, LE, GT, GE, EQ, NE

<declareStmt> DECLARE

<value> NUM, TRUE, FALSE

<caseStmt> CASE

<default> DEFAULT, ε

<conditionalStmt> SWITCH

<range> NUM

<iterativeStmt> FOR, WHILE

<rangeArr> NUM, ID

<statement> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH

<printOpt> true, false, ID, NUM, RNUM

<simpleStmt> ID, USE, SQBO

<whichStmt> ASSIGNOP, SQBO

DECLARE, DRIVERDEF, DEF

<term> BO, ID, NUM, RNUM, PLUS, MINUS

<arithmeticExpr> BO, ID, NUM, RNUM, PLUS, MINUS

<opt\_expr> BO, ID, NUM, RNUM, PLUS, MINUS, true, false

<expression> BO, ID, NUM, RNUM, PLUS, MINUS, true, false

## FOLLOW:

\$

<moduleDeclarations> DRIVERDEF, DEF

<moduleDeclaration> DECLARE, DRIVERDEF, DEF

<otherModules> DRIVERDEF, \$

<driverModule> DEF, \$

<module> DEF, DRIVERDEF, \$

<ret> START

<input\_plist\_lr> SQBC

<input\_plist> SQBC

<output plist> SQBC

<datatype>

<rangeArr> SQBC

<type> COMMA, SQBC

<moduleDef> DEF, DRIVERDEF, \$

<statements> END, BREAK

<statement> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<ioStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<var>
MUL, DIV, BC, PLUS, MINUS, LT, LE, GT, GE, EQ, NE, AND, OR,

SEMICOL

<whichld>
MUL, DIV, BC, PLUS, MINUS, LT, LE, GT, GE, EQ, NE, AND, OR,

SEMICOL

<printOpt> BC

<simpleStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<assignmentStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<whichStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<lvalueIDStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<lvalueARRStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<index> SQBC, RANGEOP

<moduleReuseStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<optional> USE

<idList\_Ir> COLON, SQBC, SEMICOL

<idList> COLON, SQBC, SEMICOL

<expression>
BC, SEMICOL

<opt\_expr\_lr> BC, SEMICOL

<opt\_expr> AND, OR, BC, SEMICOL

<one\_more\_opt> AND, OR, BC, SEMICOL

<booleanConst> AND, OR, BC, SEMICOL

<arithmeticExpr\_lr> BC, LT, LE, GT, GE, EQ, NE, AND, OR, SEMICOL

<arithmeticExpr> BC, LT, LE, GT, GE, EQ, NE, AND, OR, SEMICOL

<term Ir> PLUS, MINUS, BC, LT, LE, GT, GE, EQ, NE, AND, OR, SEMICOL

<term> PLUS, MINUS, BC, LT, LE, GT, GE, EQ, NE, AND, OR, SEMICOL

<factor> MUL, DIV, PLUS, MINUS, BC, LT, LE, GT, GE, EQ, NE, AND, OR,

**SEMICOL** 

<qo>

<op1> BO, ID, NUM, RNUM, PLUS, MINUS

<op2> BO, ID, NUM, RNUM, PLUS, MINUS

<logicalOp> BO, ID, NUM, RNUM, PLUS, MINUS, true, false

<relationalOp> BO, ID, NUM, RNUM, PLUS, MINUS

<declareStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<value> COLON

<caseStmt> ID, DEFAULT

<default> END

<conditionalStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK

<range> BC

<iterativeStmt> GET\_VALUE, PRINT, DECLARE, FOR, WHILE, ID, USE, SQBO,

SWITCH, END, BREAK