**ASSIGNMENT NO.**

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CLASS: BE COMP-1 ROLL NO.: 402055

**PROGRAM:**

**CAL.L**

%{

#include "y.tab.h"

extern int yyerror(char \*e);

%}

%%

[0-9]+|[0-9]+\.[0-9]+ {yylval.dval = atof(yytext); return num;}

sin {return (SIN);}

cos {return (COS);}

tan {return (TAN);}

root {return (ROOT);}

log {return (LOG);}

cube {return (CUBE);}

power {return (POWER);}

square {return (SQUARE);}

[()] {return yytext[0];}

[a-zA-Z]+ {yylval.dname = yytext[0]; return name;}

[ \t]+

\n return 0;

. return yytext[0];

%%

int yywrap()

{

return 1;

}

**CAL.Y**

%{

#include<stdio.h>

#include<math.h>

extern int yyerror(char \*e);

extern int yylex();

extern int yyparse();

%}

%union

{

double dval;

char dname;

}

%token <dval> num

%type <dval> exp

%token <dname> name

%token SIN COS TAN ROOT LOG CUBE POWER SQUARE

%left '+' '-'

%left '\*' '/'

%%

S : name '=' exp {printf("\n%c = %.2f",$1,$3); printf("\n");}

| exp {printf("\n Result = %.2f",$1); printf("\n");}

;

exp : exp '\*' exp {$$ = $1 \* $3;}

| exp '/' exp {

if($3==0)

{

yyerror("Divide by zero error..");

exit(0);

}

else

{$$ = $1 / $3;}

}

| exp '+' exp {$$ = $1 + $3;}

| exp '-' exp {$$ = $1 - $3;}

| SIN '(' exp ')' {$$ = sin($3\*3.141/180);}

| COS '(' exp ')' {$$ = cos($3\*3.141/180);}

| TAN '(' exp ')' {$$ = tan($3\*3.141/180);}

| ROOT '(' exp ')' {$$ = sqrt($3);}

| LOG '(' exp ')' {$$ = log($3);}

| CUBE '(' exp ')' {$$ = $3\*$3\*$3;}

| SQUARE '(' exp ')' {$$ = $3\*$3;}

| POWER '(' exp ',' exp ')' {$$ = pow($3,$5);}

| '(' exp ')' {$$ = $2;}

| num

;

%%

int main()

{

printf("\nEnter a expression...\n");

yyparse();

return 0;

}

extern int yyerror(char \*e)

{

printf("\n%s\n",e);

}

**OUTPUT:**



