**NATIONAL INSTITUTE OF TECHNOLOGY PUDUCHERRY**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING**

**CS306 – PCD LAB**

**B. TECH / CSE - VI Semester**

**Date: 15.03.2022 EXERCISE 8 Duration : 3 Hours**

**Marks : 5 Marks**

1. **AIM:**To generate the target code for the given for expression.

**CODE**:

**Lex Program:**

%%

[0-9]\* { yylval = atoi(yytext); return NUM; }

[a-zA-Z]\* { yylval = yytext[0] ; return NAME; }

[ \t] { }

\n return 0;

. return yytext[0];

%%

**Yacc Program:**

%start GOAL

%token NUM NAME

%{

#include<stdlib.h>

#include<stdio.h>

int vala=0,valb=0;

int t=0;

%}

%%

GOAL : NAME '=' EXP { printf("Answer:t%d\t",$3); printf("MOV(@%c,AX)\n",$1); };

EXP : T '+' EXP { $$=t; printf("t%d=t%d + t%d\t",t,$1,$3); printf("ADD(AX,BX)\n"); t++; }

| T '-' EXP { $$=t; printf("t%d=t%d - t%d\t",t,$1,$3); printf("SUB(AX,BX)\n"); t++; }

| T '\*' EXP { $$=t; printf("t%d=t%d \* t%d\t",t,$1,$3); printf("MUL(AX,BX)\n"); t++; }

| T '/' EXP { $$=t; printf("t%d=t%d / t%d\t",t,$1,$3); printf("DIV(AX,BX)\n"); t++; }

| T { $$=$1;} ;

T : NUM { $$=t; printf("t%d=%d\t",t,$1); if(vala==0) {printf("MOV(AX,#%d)\n",$1);vala=1;}

else if(valb==0) {printf("MOV(BX,#%d)\n",$1);valb=1;};

t++;}

| NAME { $$=t; printf("t%d=%c\t",t,$1); if(vala==0) {printf("MOV(AX,@%c)\n",$1);vala=1;}

else if(valb==0) {printf("MOV(BX,@%c)\n",$1);valb=1;};

t++;};

%%

#include "lex.yy.c"

int main()

{

printf("Enter an Expression :");

yyparse();

return 0;

}

int yywrap()

{

return 1;

}

void yyerror(char \*p)

{

}

**OUTPUT**:

