Roll. No. | | | | | | | | | | |

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
ANNA UNIVERSITY, CHENNAI – 25
V SEMESTER - B.E CSE

CS6109 – COMPILER DESIGN LABORATORY
LAB ASSESSMENT- SET B

Time: 2.00 hr Max. Marks: 25
Date: 02nd Dec 2021

Instructions:

- Name your files for questions 1, 2 and 3 as Txxxx1, Txxxx2 and Txxxx3, where xxxx = last 4 digits of your Reg. number
- Include your roll number as a comment line in your programs

Note:

- Use all predefined functions and variables in LEX/YACC
- Read the input using text file

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1. a.Write regular definition to display the line of string for the following using LEX. (6+4)

   i. Match any string of one or more digits with an optional prefix of +, -, * and /.
   ii. Translating all input string into uppercase, find the character and word count of the input string
   iii. Eliminating all C-like comments from a text file

```
typedef union {
intiValue; /* integer value */
charsIndex; /* symbol table index */
nodeType *nPtr; /* node pointer */
} YYSTYPE;
```

b. Convert the while loop to nested for statement

```
inti=1, j=1;
while (i<= 4 | | j <= 3)
  {
                printf("%d %d\n",i, j);
                i++;
                j++;
  }
```

2. Consider the following program fragment (5+5)

```
inti, j, a[2][3] ;
float c , x;
for ( i = 1; i<= 10 ; i++)   {
                for ( j = 1 ; j <=10 ; j ++ ) {
                                a[i][j] = 1;
                                x = c + a[i][j] ;
                        }
        }
```

Perform the following using LEX/YACC

a. Identify the tokens and print them
b. Validate the constructs in the program

3. Write a LEX program, which scans and stores string literals used in C language. Your lexer should detect the strings and store them into a simple symbol table and print the strings that have atleast 3 words. (5)