DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NITK SURATHKAL

SEM – V

CS 305 – COMPILER DESIGN LAB

Week – 4 Exercises

Date: 25. 08. 2020

Time: 2pm to 4 pm   **Max Marks: 20**

1. Implement Lex and Yacc program to recognize the strings of

$\{a^i b^j c^k \mid i, j, k \geq 0, \text{ and } i=j \text{ or } i=k\}$

Hint: Use the following Context Free Grammar (CFG) in YACC program to generate the above string.

$$S \rightarrow XY \mid W$$

$$X \rightarrow aXb \mid \varepsilon$$

$$Y \rightarrow cY \mid \varepsilon$$

$$W \rightarrow aWc \mid Z$$

$$Z \rightarrow bZ \mid \varepsilon$$

Parse the following input strings using the above CFG and show the output (valid or invalid string) in your terminal. Do not store your output in a file.

   i.   aabbbcc
  ii.   aaabbbcccc
 iii.   aaaabbcc
 iv.   abbbcc
  v.   ddeeff
 vi.   cccc

Upload your code in moodle with its output in .zip or .rar format.

Note: Outputs in the form of screenshots alone will be considered for evaluation.