AHSANULLAH UNIVERSITY OF SCIENCE AND TECNOLOGY

Program: **B. Sc. in Computer Science and Engineering**

Department: **Computer Science and Engineering**

Course No: **CSE4130** Course Title: **Formal Languages and Compilers Lab**

Final Online Assessment, Spring 2020

Time: **35 Minutes.** Full Marks: **20**

Instructions:

1. Start coding with the following comment: [File Name: *yourID_FinalQuiz_QuesNo*]

   /* Name: ID: Lab Group:

   Course No: CSE4130 Final Online Assessment, Spring 2020

   */
2. Write your codes on A4 size paper.
3. Scan your handwritten answer script with clear visibility and convert it into a single pdf file.
4. Name the pdf file as: ***YourID_FinalQuiz.pdf***.
5. Preserve your codes and handwritten answer script as it will be collected after reopening of the University.

Q1. Write a program to read a C program as input and find out the user defined functions in the program along with the line number. You must write the output as [*Function Name: Line Number*] in a file and display the output on console reading from the file. **[10]**

Sample Input	Sample Output

#include<stdio.h>
void func()
{
}
int main(void)
{
int a, b;
printf(“”);
func();
scanf(“”);
return 0;
}
	func: Line No 2
	main: Line No 5

Q2. Design a recursive-descent parser for the following grammar and mention some strings (at least one from each production rule) from the language generated by the grammar. **[10]**

$$E \rightarrow aA \mid bAB$$
$$A \rightarrow b \mid bA$$
$$B \rightarrow a \mid \varepsilon$$