Daffodil International University
Department of Computer Science and Engineering
Faculty of Science and Information Technology
Mid Term Examination, Semester: Fall 2019

Course Code: CSE331 **Course Title: Compiler Design** **Time: 90 minutes**
Course Teacher: All **Sections: All** **Campus: All** **Total Marks: 25**

[Answer all the questions. The figures in the right margin indicate the full marks. All portions of each question must be answered sequentially.]

1. **a)** What are the advantages of a compiler over an interpreter and an interpreter over a compiler? [2]

   b) Considering the following expression show the task for each phase of compiler: [5]

   Learning = 0.3*Resource + 0.3*Questioning + 0.1*Group_Study + 0.3*Analysis

   c) Identify the specific error from the following code: [3]

```
#include<stdio.h>
int main{
innt a[2]={2,4,6}, b=1;
sum = a[b]+b
prntf("Rasalt is: %f, sum);
return b;
}
```

2. **a)** Write down the formal definition of Finite Automata? Justify your answer –" **Every DFA is a NFA, but not the vice versa".** [2]

   b) Considering **L as Letters, D as Digits** and **S as Symbol** [2]

3. **a)** Define **Pattern** and **Lexeme**. Explain the tasks of **Input Buffering**. [2]

   b) Show the NFA for the following expression [2]

   (i) **MN*P | QR$^+$**

   (ii) **Ma (M | a)* aM**

   c) Consider the production **A → AR | b** and answer the following: [1+1+1.5]

   (i) The above production is left recursive or not?

   (ii) Is there any rule for elimination of left recursion?

   (iii) Draw the parse tree for before and after the elimination of left recursion.