	Course Name:	Compiler Construction	Course Code:	
	Program:	BS (CS)	Semester:	Fall 2019
	Duration:	60 Minutes	Total Marks:	30
	Paper Date:	09-Nov-2019	Weight	
	Section:	ALL	Page(s):	3
	Exam Type:	Midterm-2		

Student : Name:_____ Roll No._____
Section:_____

Question 1 (10 marks)

Consider the following HTML table that contains student names and marks:

```
<table>
     <tr> <td>Junaid</td> <td>50</td>  </tr>
     <tr> <td>Saleem</td> <td>60</td>  </tr>
</table>
```

Identify all the token-lexeme pairs for the above string.

Question 2 (10 marks)

Consider the following translation scheme to count occurrences of # sign:

```
{int c = 0; // global}
S -> P     {print(c)}
P -> P ( P )
P -> #     {++c}
```

Now write an equivalent translation scheme that uses local variable(s), instead of the global variable.

Question 3 (10 marks)

Consider the following translation scheme:

```
S -> S1 , D      {S.t = S1.t + S1.n + ") " + D.t;
                  S.n = S1.n + 1}

S -> #           {S.t = ""; S.n = 0}

D -> id : T      {D.t = T.t + " " + id.lex + ";\n"}

T -> integer     {T.t = "int"}
T -> character   {T.t = "char"}
```

a) Give output of this translation scheme for the following input.

```
# , x : integer , y : character
```

b) Also draw a parse tree showing all the calculated attributes.