**CSE 2110 - Advanced Programming Sessional**

ID:

**Mid Term Examination (Evening)**

**Date: 28/11/2024**

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| **Marks: 15** | **Time: 30 Mins** |

**Question 1**: (7 Marks)

Write a Python function that accepts a string as input and performs the following operations:

* Identifies and prints all email addresses in the string using regular expressions.
* Counts and displays the number of email addresses found.
* If no email addresses are found, print "No email addresses found."

**Hints for Regular Expression:**

* Email addresses typically follow the format: <username>@<domain>.<extension>.
* Use the regular expression pattern:

[A-Za-z0-9.\_%+-]+@[A-Za-z0-9.-]+\.[A-Z|a-z]{2,}

**Sample Input:**

"Please contact us at support@example.com or sales@example.org for assistance."

**Expected Output**:

Found emails: ['support@example.com', 'sales@example.org']

Total emails: 2

**Question 2:** (8 Marks)

Create a Python class named **Rectangle** with the following:

* Two attributes: **length** and **width**.
* A method named **area()** that calculates and returns the area of the rectangle. Ensure the method raises a **ValueError** if length or width is not a float or int. Use exception handling to print a custom error message if invalid input is provided.
* A method named **perimeter()** that calculates and returns the perimeter of the rectangle.

Write a Python program to:

* Create an instance of the Rectangle class with user input for length and width.
* Display the area and perimeter of the rectangle.
* Check if the rectangle is a square (length is equal to width) using a conditional statement.