00827

The Open University of Sri Lanka
Faculty of Engineering Technology
Department of Electrical and Computer Engineering

Study Programme	: Bachelor of Software Engineering
Name of the Examination	: Final Examination
Course Code and Title	**: EEI3372 Programming in Python**
Academic Year	: 2021/22
Date	: 16th August 2022
Time	: 10.00-13.00
Duration	: **3 Hours**

General Instructions

1. Read all instructions carefully before answering the questions.
2. This question paper consists of 06 questions
3. **All Questions are compulsory.**
4. Answers should be in clear handwriting.
5. Do not use red color pen.

Answer ALL questions

Question 1: Write short answers on the following:

a. Briefly explain the differences between a Compiler and an Interpreter with suitable examples. [4 marks]

b. Briefly explain the below Errors.

i. Syntax Errors ii. Runtime Errors iii. Semantic Errors [6 marks]

Question 2: ABC company will offer discounts to customer in the new year season based on their total bill. A discount will be applicable under the following criteria.

Total order amount	Discount
Less than Rs 5000	5%
Rs. 5000 – 10 000	10%
More than Rs.10 000	15%

Write Python code for the following:

- Read the Total Order amount from the keyboard (T_order)
- Declare a function named Discount_Cal which will calculate the discount based on the Total Order amount (T_order) using the specified criteria.
- Write Display_details which displays Total Order amount, Discount and order amount after the discount [20 marks]

Question 3: Determine the output of the following python expressions/code segments.

a. (5+7)/3*4^2

b. len(["ousl","EEI3372", 12, 61, 43, 0.5])

c.
```
def Max(x, y):
    if x > y:
        print(x, 'is maximum')
    elif x == y:
        print(x, 'is equal to', y)
    else:
        print(y, 'is maximum')

Max(45, 77)
```

d.
```
y = 'software'
for i in y:
    print(i.upper())
```

e.
```
>>> x={3,4,5,6}
>>> y=x.copy()
>>> y.add(7)
>>> a
```

[2x5 =marks]

Question 04

1. What is meant by mutable and immutable in Python? Explain with examples. [4 mark]
2. Write a simple snippet for the following questions
   Consider lists, A = [5,90,12] B = [4,"i","l",7,2,0] C = [2,15,57,8]
   a. Add numbers 11 and 13 to the list A. [2 marks]
   b. Remove number 90 from the list A. [2 marks]
   c. Replace "i" in list B with "m". [2 marks]
   d. Print the first 3 items in list C. [2 marks]
   e. Remove all the items from list B. [2 marks]
3. Indexing is an important concept when accessing tuples.
   A = ("CITES","ABC" ,[20, 30, 40], (2, 4, 6),4)
   a. Write a snippet to access the value 4 in tuple A [3 marks].
   b. Write a snippet using the Range function to print values from 2 - 12. [3 marks]

Question 05

1. List two types of inheritance supported by Python. [4 marks]
2. Write a Python Program to produce the output in Figure 1.
   a. A user should be able to enter the Account holder`s name, Account holders' number, Account type (Current account/Savings account), account balance and Current Interest rate.
   b. Write a function called ***Cal_Interest*** that calsulated and returns the interest using the details entered by the user
   c. Write function ***Display_details()*** that displays, all the details according to the given format.
   Sample Output

```
-- Account Details --

Account Holder Name: K D Rathnayaake
Account Number: 335745032507
Account Type: Savings
Current interest Rate:15%

Account Balance: Rs.35678.24
Interest Earned: Rs 234.54
```

Figure 1 [16 marks]

- Assume that the user will not enter any invalid data.
- Use appropriate names when naming identifiers

Question 06

1. Explain the difference between overriding and overloading. [4 marks]
2. Figure out the output of the following Python code and explain the reason for getting the output. [6 marks]

```
def fun(x):
    if x < 4:
        y = x/(x-3)
    print("Value of y = ", y)
try:
    fun(3)
    fun(5)

except ZeroDivisionError:
    print("ZeroDivisionError Occurred and Handled")
except NameError:
    print("NameError Occurred and Handled")
```

3. Write a simple python snippet to display all the numbers from 1 - 20 except 13,17 and 19. [6 marks]
4. What is the difference between .py and .pyc files in Python? [2 marks]
5. Briefly explain what Alpha testing is in Software testing. [2 marks]