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Department/ School: SCSET

END TERM EXAMINATION ODD SEMESTER 2022-23

COURSE CODE: CSET101 **MAX. DURATION 2 HRS**
COURSE TITLE Computational Thinking and Programming
COURSE CREDIT TOTAL MARKS: 40

GENERAL INSTRUCTIONS: -

1. Do not write anything on the question paper except **name, enrolment number** and **department/school.**
2. Carrying mobile phone, smart watch and any other non-permissible materials in the examination hall is an act of **UFM.**

QUESTIONS

1) Given a dictionary `dict1 = {1: "Python", 2: "Java", 3: "Ruby", 4:"Scala"}` **(1 Mark)**
Write down single line codes for following scenarios:

a. Add a new pair (5 : C++) to the dictionary.

b. Removes the last inserted key-value pair

2) Consider a List, List1 = [0,2,4,6,8,10]. Write down single line codes for following scenarios: **(1 Mark)**

a. Access Last Element of the List

b. Reverse a List using Slicing and Indexing (Using Loops and reverse function not allowed)

3) Following code prints all the numbers in different lines. Modify the code to print all the numbers in the same line, separated by comma. **(1 Mark)**

```
nums = [2, 4, 6, 8, 10, 12]
for i in nums:
      print(i)
```

Output:

```
2
4
6
8
10
12
```

Expected Output: 2 , 4 , 6 , 8 , 10 , 12

4) *Determine the output* for the following code: **(1 Mark)**

```
x = ((0.0, 1.0, 2.0), ("ABC"))
y =  x[0][1]
print(y)
```

5) *Determine the output* for the following code: **(2 Marks)**

```
print(not ((7 and 0 or 5) & (7>7) and (2>-1)))
```

3

6) *Determine and explain the output* of the following codes. Explain the following codes. **(2 Marks)**

```
"{0:b}".format(45)
"{0:.2f}".format(345.7916732)
```

7) *Determine the output* for the following code: **(2 Marks)**

```
def fn(x):
      try:
            print(a/b)
      except TypeError:
            print("Unsupported operation")
      except ZeroDivisionError:
            print("Division by zero not allowed")
fn(0)
```

8) *Determine the output* for the following code. In case it generates any error, *explain why*? **(2 Marks)**

```
dictionary = {'GFG': 'geeksforgeeks.org', 'google': 'google.com',
'facebook': 'facebook.com' }
del dictionary['google']
for key, values in dictionary.items():
      print(key)
dictionary.clear()
for key, values in dictionary.items():
      print(key)
del dictionary
for key, values in dictionary.items():
      print(key)
```

9) *Differentiate* Public, private and Protected access. *Explain* which type of access attribute is declared here: **(3 Marks)**

```
class Medicine:
   def __init__(self, salt, expiry):
         self.__salt = salt
         self.__expiry = expiry
```

10) Explain in brief the concept of pass by value and return a value in a function with an example. **(3 Marks)**

11) Define Implicit and Explicit Conversions in python? Convert the following and mention the conversion type: **(3 Marks)**

a) 3/1.5

b) x=10
```
print(float(x))
str(x)
```

12) *Determine the output* for the following code: **(3 Marks)**

```
x = 1
while x < 4:
   x += 1
   y = 1
   while y < 3:
       print(y, end=' ')
       y += 1
```

13) *Determine the output for* the following code: **(3 Mark)**

```
def function_2(n, tot):
    if n == 0:
        return False
    else:
        return function_1(n-2, tot-2)
def function_1(n, n1= None):
    if n == 0:
        return True
    else:
        return n*function_1(n - 1)
print(function_2(2,4))
```

14) Write a function that accepts a list as an argument and returns True/False depending on if elements of a list are same when read from front and back. **(3 Marks)**

For Example,
For list [2,3,15,15,3,2], the function should return True.
For List [3,6,9,1,9,6,3], the function should return true.
For List [2,3,4,5,3,2], the function should return False.

15) Complete the code for following scenarios: **(10 Marks)**

A. Create a class called User. Create four attributes called `name, email id and contact number.` Default values of email is hello@gmail.com. Create a class attribute `organization` with value "Meta". This attribute should be same for all instances. *(1 Mark)*

B. Create a method called describe_user( ) that prints a summary of the user's information in following format (Consider this as an example):

```
User's Profile:
Name: Rohan Kapoor
Email: rohan@gmail.com
Contact: 9876543210
```

Make another method called greet_user() that prints a personalized greeting to the user.

For Example:

```
Hello Rohan Kapoor! Welcome to our Community!
```

(2 Marks)

C. Create 2 instances of User class, user1 and user2, for which describe_user( ) should print following output: *(1 Mark)*

```
User's Profile:
Name: Rohan Kapoor
Email: rohan@gmail.com
Contact: 9876543210

User's Profile:
Name: Ahmed Ali
Email: hello@gmail.com
Contact: 9876543211
```

D. Add a protected attribute called `login_attempts` to your `User` class. Write a method called `increment_login_attempts()` that increments the value of `login_attempts` by 1. Write another method called `reset_login_attempts()` that resets the value of `login_attempts` to 0. *(2 Marks)*

E. Create another class `Privilige`. This class has one private attribute `priviliges`, that stores a list of priviliges: "Can Add Post", "Can Delete Post", "Can Ban User". The method `show_priviliges( )` displays the administrator's set of privileges like: *(1 Mark)*

```
Administrator's set of Priviliges:
Can Add Post
Can Delete Post
Can Ban User
```

F. An editor is a user that can edit the posts. Create a class called `Editor` that inherits the user class. It should have an additional attribute called `role` with default value "Editing the Posts".
A moderator is a user that reviews the posts posted by different users. Create a class called `Moderator` that inherits the user class. It should have an additional attribute called `role` with default value "Reviewing the Posts". *(1 Mark)*

G. An administrator is a special kind of user. Write a class called `Admin` that inherits the `Editor` and `Moderator` class written previously. Make a Privileges instance as an attribute in the Admin class. When an object of admin class is created and the role needs to be printed, the output should be: *(2 Marks)*
`Reviewing the Posts.`

Create an object of Admin class, with name, email, contact as "Jairaj", jairaj@gmail.com, "9654178277".

Complete the spaces in the Code:

class User(______________________________):

____

#Initialize name, email, profession and contact number
def ______________________________:

____

def describe_user(____________________):

____

def greet_user(______________________):

____

def increment_ login_attempts(_____________________):

____

def reset_ login_attempts(____________________):

____

Class Privilige(______________________):

____

#Initialize Priviliges
def

____

def show_priviliges(____________________________):

____

Class Editor(__________________________________):

____

Class Moderator(__________________________________):

____

Class Admin(__________________________________):

____

user1 =
user2 =
user1.describe_user( )
user1.greet_user( )
admin1 =
print(admin1.role)

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