# PES University, Bengaluru

(Established under Karnataka Act No. 16 of 2013)

UE19MC501

## OCTOBER 2020: IN SEMESTER ASSESSMENT MCA
## III SEMESTER
## TEST – 1

## UE19MC501 (4 credit subject) - Python Programming

| Time: 2 Hrs | Answer All Questions | Max Marks: 60 |
|---|---|---|

| | | | |
|---|---|---|---|
| 1. | a) | Write a program to swap two numbers without using third variable and conditions. | 3 |
| | b) | Write a program to swap the first and last letter of a string without using string methods. | 3 |
| | c) | Write a program to accept the radius and print the diameter, area and circumference of a circle. | 4 |
| 2. | a) | What is the output of the following code snippets? | 10 |

i.
```
str = "pynative"
print (str[1:3])
```

ii.
```
var = "James" * 2 * 3
print(var)
```

iii.
```
x = 36 / 4 * (3 + 2) * 4 + 2
print(x)
```

iv.
```
v1, v2, v3 = 1, 2, "3"
print(var + var2 + var3)
```

v.
```
x= 2 * 2 **3
print(x)
```

vi.
```
tuple = (1, 2, 3)
print(2 * tuple)
```

vii.
```
print(format("Python Programming","^30"))
```

viii.
```
(2**2)**(2**3)
```

ix.
```
10<20 and 30<20 or 40 >10
```

x.
```
print(0.1 + 0.2 == 0.3)
```

| | | | |
|---|---|---|---|
| 3. | a) | What is the output and the reason for the output of the following code? | 10 |

i.
```
i = 1
while True:
    if i%3 == 0:
        break
    print(i)
    i + = 1
```

ii.
```
x = 123
for i in x:
    print(i)
```

iii.
```
i = 0
while i < 3:
    print(i)
    i += 1
else:
    print(0)
```

iv.
```
my_string = PythonProgramming'
for i in range(my_string):
    print(i)
```

v.
```
p=8
if p in (1,3,5,7,8,10,12):
```

```
        d = 31
else:
    if p in ( 4, 6, 9, 11):
            d=30
    else:
        if p ==2 :
            d=28
print(d*30)
```

4. a) Write a function in Python to find the length of a given string. Do not use built-in function. Use the template given below. (4)

```
def find_str_length(str):
    counter =0
    #complete the code
    ----------
    return counter
```

b) Write a python program to print the following pattern. (6)

```
Enter the number of rows6
1
3 2
6 5 4
10 9 8 7
15 14 13 12 11
```

5. a) Scenario (4)

Create a Bus child class that inherits from the Vehicle class. The default fare charge of any vehicle is seating capacity * 100. If Vehicle is Bus instance, we need to add an extra 10% on full fare as a maintenance charge. So total fare for bus instance will become the final amount = total fare + 10% of the total fare.

Given the class and its attributes write the code in place of ##########.

```
class Vehicle:
   def __init__(self, name, mileage, capacity):
      self.name = name
      self.mileage = mileage
      self.capacity = capacity

   def fare(self):
      return self.capacity * 100

class Bus(Vehicle):
   ##################

School_bus = Bus("School Volvo", 12, 50)
print("Total Bus fare is:", #######.fare())
```

b) Write a Python program using regular expressions to match a string that contains only upper and lowercase letters, numbers, and underscores. (4)

c) Write the regular expressions for the following scenarios (2)

i. Replace all occurrences of space, comma, or dot with a colon.
ii. Find all five characters long word in a string.

6 a) What is the output of the following code? 10

i.
```
class Acc:
    def __init__(self, id):
        self.id = id
        id = 555

acc = Acc(111)
print(acc.id)
```

ii.
```
class whatsnew:
    def __init__(self, id):
        self.id = id

manager = whatsnew(100)
manager.__dict__['life'] = 49
print manager.life + len(manager.__dict__)
```

iii.
```
class A(object):
    val = 1
class B(A):
    pass
class C(A):
    pass
print(A.val, B.val, C.val)
B.val = 2
print(A.val, B.val, C.val)
A.val = 3
print(A.val, B.val, C.val)
```

iv.
```
class A:
    def __init__(self, i = 0):
        self.i = i

class B(A):
    def __init__(self, j = 0):
        self.j = j
b = B()
b.i
b.j
```

v.
```
class A:
    def __init__(self):
        self.calcl(30)
        print("i from A is", self.i)
    def calcl(self, i):
        self.i = 2 * i;
class B(A):
    def __init__(self):
        super().__init__()
    def calcl(self, i):
        self.i = 3 * i;
b = B()
```