

[This question paper contains 12 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 2060 C

Unique Paper Code : 62347502

Name of the Paper : Programming with Python

Name of the Course : B.A. Programme (LOCF)

Semester : V Year of Admission 2019  
(onwards)

Duration : 3 Hours Maximum Marks : 75

**Instructions for Candidates**

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Question No. 1 is compulsory.
3. Attempt any 5 of Question Nos. 2 to 8.
4. All parts of a question must be answered together.

1. (a) Identify valid identifier(s). Justify your answer : (4)

(i) \$GasPrice

(ii) 3python

(iii) \_myname

P.T.O.

(iv) Total\_Marks

(v) Dob

(vi) else

(vii) Address 99

(b) Construct logical expressions for representing the following conditions : (3)

(i) Salary is greater than 35000 and less than 45000.

(ii) Gender is female or Age is less than 65.

(iii) Length of variable name is greater than 15.

(c) What will be the output of the following code segment : (2)

```
a=15  
a/=5  
print(a)  
a+=2  
print(a)
```

(d) Differentiate between syntax errors and semantic errors with the help of an example of each. (4)

(e) Find the output in each of the following code snippets : (5)

A. Consider the given list:

```
Listl= [80,75,83]
```

```
Listl=Listl+[85]
```

```
print(Listl)
```

```
List=Listl
```

```
Listl[1]=90
```

```
print(List)
```

B. Consider the given tuple:

```
t=(2, 4, 6, 8)
```

```
t=(5,) + t[1:]
```

```
print(t)
```

```
print (t*2)
```

- (f) Write a python function named as `Wordscount(s)` that take a string `s` as an argument and return the number of words in that string. (3)

- (g) Given the following recursive function : (4)

```
def foo(n):  
  
    if (n<0):  
  
        return -1  
  
    if (n==0):  
  
        return 1  
  
    return (n*foo(n-1))
```

Explain step by step execution of the function call `foo(6)`. What will be the output of `foo(6)`?

2. (a) A dictionary `month` is defined as : (5)

```
month= {'Jan':31, 'Feb':28, 'March':30,  
'April':31}
```

Give the output of the following statements:

(i) `print(month ['March'])`

(ii) `print('Jan' in month)`

(iii) print (month.get ('Feb', 0))

(iv) print (list (month.keys ()))

(v) print (list (month.values ()))

- (b) Write a python program to calculate the grade of a student in college. Ask user to enter marks and print the corresponding grade.

The college has following rules for grading system:

Marks	Grade	
45 to 50	D	
50 to 60	C	
60 to 80	B	
Above 80	A	(5)

3. (a) Write a function called chop(l) that takes a list l as an argument and remove the first and last elements and display the modified list l1. For eg. l=[10, 11, 12, 13, 14, 15, 16], so, the function should display list l1=[11, 12, 13, 14, 15]. The original list should not be modified. (5)

- (b) Write a program using for loop to print the following pattern of n rows: (5)

For example: if n is 5, following 5 lines of pattern will be printed:

•  
• •  
• • •  
• • • •  
• • • • •

4. (a) Write the output of the following string functions on the given string colors: (5)

colors='Red, green, blue, Red, Red, green'

- print (colors.find ('red'))
- print (colors.istitle ())
- print (colors.split (' , '))
- print (colors [1:len (colors):3])
- print (colors.capitalize ())

(b) Write a python program that takes a number as input and determine whether it is prime number or not. A number that is divisible only by itself and 1 is called prime number. (5)

5. (a) Give the output of the following code snippet:

(2)

```
a=2  
:  
  
def test():  
    global a  
  
    a=a+1  
  
    print (a)  
  
print (a)
```

(b) Give the value of add variable that will be produced by code segment given below: (Justify your output) (4)

```
i=0  
  
add=0  
  
while i<9:
```

```
if i%4==0:  
    add=add+i  
    i=i+2  
print(add)
```

(c) Evaluate the following expressions: (4)

(i)  $12 \& 22$

(ii)  $5 \% 10 + 10 - 25 * 8 // 5$

(iii)  $14 ^ 18$

(iv) 'hello'\*5 >'hello' or 'bye' < 'Bye'

6. (a) Consider two sets values and squares given below: (5)

values={1, 2, 3, 4, 5, 6, 7, 8, 9}

squares={1, 4, 9, 16, 25}

Write the set operations using python operator to determine following:

(i) All the numbers whether values or squares.

- (ii) Those numbers which are both values and squares.
- (iii) Those values which are not squares.
- (iv) To check if squares is subset of values.
- (v) To check if values is superset of squares.

(b) Consider the following function: (5)

```
defnMultiple(a=0, num=1):  
    return a*num
```

what will be the output produced when the following calls are made:

- (i) nMultiple (5)
- (ii) nMultiple (5, 6)
- (iii) nMultiple (num=7)
- (iv) nMultiple (num=6, a=5)
- (v) nMultiple (5, num=6)

7. (a) What output will be produced on execution of the following code segment? (4)

(i) class Area:

```
def __init__(self):  
    self.rad=10  
    self.a=0  
  
def cal(self):  
    a=self.rad*self.rad  
    return a  
  
A1=Area()  
  
print (A1.cal())
```

(ii) count=35

```
for x in range(0,10):  
    count-=1  
  
    if x==2:  
        break  
  
print (count)
```

(b) Write one line python code for- (2)

- (i) Swapping two numbers without using a third variable.
- (ii) Generating the series 7, 14, 21, ..., 70 using the range function.

(c) Write a function maximum (x, y) to calculate and return maximum of the two numbers x and y. Use this function to find maximum of three numbers. (4)

8. Define a class Student that keeps tracks of academic record of students in a school. (10)

The class should contain the following data members:

rollNum- Roll number of student

name- Name of student

marks- Total Marks of student (considering 500 as maximum marks)

stream- 'A': Arts, 'C': Commerce , 'S': Science

percent- Percentage computed using Marks

The class should support the following methods:

- `__init__` for initializing the data members - `rollNum`, `name`, `marks` & `stream`
- `getStream` for displaying the stream of the student
- `percentage` for computing and printing the overall percentage for the student.
- `printDetails` to print the details of the student including `rollNum`, `name`, `marks` and `stream`

Create an object `s1` of class `Student` with the `rollNum` as `1101` and `name='Archit'`, `marks=425` and `stream` as '`A`'. Call `percentage` method to calculate the percentage using object `s1`.