Roll No. ☐☐☐☐☐☐☐☐☐☐☐

S. No. of Question Paper : 1367

Unique Paper Code : 62347502

Name of the Paper : **Programming with Python**

Name of the Course : **B.A. (Programme) Computer**

Application : DSE-1

Semester : **V**

Duration : **3 Hours**   Maximum Marks : **75**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Question No. **1** is compulsory.

Attempt any 5 of Question Nos. 2 to 8.

Parts of a question must be answered together.

1. (*a*) Which of the following is an *invalid* name ?   3
    (*i*)   my_string_1
    (*ii*) 2nd_string
    (*iii*) foo
    (*iv*) __init__
    (*v*)   in
    (*vi*) it

   (*b*) Which of the following is an *invalid* statement ? 1
    (*i*)   abc = 1,000,000
    (*ii*) a b c = 1000 2000 3000
    (*iii*) a,b,c = 1000, 2000, 3000
    (*iv*) a_b_c = 1,000,000

P.T.O.

(c) What is the output of the following code segments ? 6

    (i)
```
x = 'abcd'
for i in range(len(x)):
    x = 'a'
print(x)
```

    (ii)
```
i = 1
while True:
    if i%007 == 0:
        break
    print(i)
    i += 1
```

    (iii)
```
def foo(k):
    k[0] = 1
q = [0]
foo(q)
print(q)
```

(d) What is the output of the following Python code fragment ? Justify your answer : 3

    (i)
```
weekdays = ['sun','mon','tue','wed','thu',
'fri','sun','mon','mon']
print(weekdays.count('mon'))
```

    (ii)
```
weekdays = ['sun','mon','tue','wed','thu','fri',
'sun','mon','mon']
print([[x,weekdays.count(x)] for x in
set(weekdays)])
```

(e)   Translate the following while loop into a for
       loop :   3

```
i = 20
while (i > 0):
    print "i = ", i
i =- 1
```

(f)   Rectify the error (if any) in the given statements : 2

```
>>> str= "Hello Python"
>>> str[6]= "S"
```

(g)   Under what conditions is binary search used ? Give

       the outline of binary search algorithm. Given :   7

```
testlist=[0,1,2,8,13,17,19,32,42],
```

       Illutsrate the operation of the binary search algorithm

       to search for the number 13.

What is the output of the following code segments ? 10

(i) class test:
```
class test:
    def __init__(self,a="Hello World"):
        self.a=a

    def display(self):
        print(self.a)
obj=test()
obj.display()
```

(ii)
```
class test:
    def __init__(self,a):
        self.a=a

    def display(self):
        print(self.a)
obj=test()
obj.display()
```

(iii)
```
def power(x, y=2):
    r = 1
    for i in range(y):
        r = r * x
    return r
print power(3)
print power(3, 3)
```

(iv)
```
x = 2
for i in range(x):
    x -= 2
    print (x)
```

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

3. (a) For the given array arr = [1,2,4,3], apply bubble sort algorithm to sort the array elements and also show the modified list after each iteration. 5

(b) What is a queue ? Write a Python code to create an empty queue. Initialize front and rear suitably. 5

4. What will be the output of the applying the following list Functions on list given below ?

10

```
L1=[1, 3, 2, 12, 2, 4, 3]
L.append(10)
L.count(2)
L.index(12)
L.insert(2,15)
L.remove(2)
```

5. (a) Write a function to compute the following series :

3

$$Sum = 1 + 1/2^2 + 1/3^2 + \ldots + 1/n^2$$

(b) Evaluate the following expressions :

3

(i) $-7*20+8/16*2+54$

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

(iii) $10+6*2**2!=9//4-3$ and $29>=29/9$

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

4

```
for letter in 'geeksforgeeks':
    if letter == 'e' or letter == 's':
        continue
    print 'Current Letter :', letter
```

6. (a) Write the output of the following code segments : 5

(i)

```
for letter in 'geeksforgeeks':
    if letter == 'e' or letter == 's':
        break
    print 'Current Letter :', letter
```

.....).

(ii)
```
def myfunc(a):
    a = a + 2
    a = a * 2
    return a
print myfunc(2)
```

(b) Write a python function to find the sum of all the numbers provided by the user as the input. [5]

7. (a) Differentiate between type conversion and type coercion with the help of an example. [5]

(b) What will be the output the following code ? [5]

```
def f(x,l=[]):
    for i in range(x):
        l.append(i*i)
    print(l)


f(2)
f(3,[3,2,1])
f(3)
```

8. (a) Write the output of the following python code : 5

```
lis = [1, 2, 3]
lis1 = [4, 5, 6]
lis2= lis + lis1
print ('list after concatenation is')
for i in range(0,len(lis2)):
        print (lis2[i]),
print ("\r")
lis3 = lis * 3
print ('list after combining is')
for i in range(0,len(lis3)):
        print (lis3[i]),
```

(b) Write output of the following python code : 5

(i)

```
x = "Welcome to GeeksforGeeks"
print x[2:5]
print x[4:10:2]
print x[-5:-3]
```

(ii)
```
i = 0
while i < 5:
    print(i)
    i += 1
    if i == 3:
        break
else:
    print(0)
```