

*Note: (a) All questions are compulsory.*

*(b) Marks are indicated against each question in square brackets.*

*(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems*

Q1. Find the output of the following Python programs.

[CO4, 4M]

(a) 

```
sum = 0
for i in range(12, 2, -2):
    sum += i
print sum
```

(b) 

```
def myfun(x, l=[]):
    for i in range(x):
        l.append(i*i)
    print(l)
myfun(2)
```

(c) 

```
D = dict()
for i in range(3):
    for j in range(2):
        D[i] = j
print(D)
```

(d) 

```
x = ['Abc', 'xyZ', 'pQr']
a = [i[0].upper() for i in x]
print(a)
```

Q2. What is exception handling? Briefly explain the method of exception handling in Python.

[CO4, 4M]

Q3. Explain the use of special functions `__init__()`, `__str__()`, `__call__()` in Python.

[CO4, 4M]

Q4. What is Java Virtual Machine (JVM)? Explain how the implementation of JVM makes Java a platform independent language.

[CO5, 4M]

Q5. Write a python program to find and display the product of three positive integer values based on the rule mentioned below: It should display the product of the three values except when one of the integer values is 7. In that case, 7 should not be included in the product and the values to its left also should not be included. If there is only one value to be considered, display that value itself. If no values can be included in the product, display -1. Note: Assume that if 7 is one of the positive integer values, then it will occur only once. [CO4, 4M]

[P. T. O.]

Q6. A DNA sequence consist of four nucleotides, namely adenine (A), thymine (T), guanine (G), and cytosine (C). Write a Python program to count the total number of occurrence of each of the nucleotides in a DNA sequence represented as a string of letters 'A', 'T', 'G' and 'C'. Use a Dictionary in Python to store the number of occurrence of each nucleotide. [CO4, 5M]

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