[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4229 **G**

Unique Paper Code : 32343307

Name of the Paper : Programming in Python

Name of the Course : **B.Sc. (H) Computer Science–SEC**

Semester : III

Duration : 2 Hours Maximum Marks : 25

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. **Section A** is compulsory.
3. Attempt any **three** questions from **Section B.**
4. Parts of a question must be answered together.

Section A
(Compulsory)

1. (a) Using examples, explain the use of the following built-in python functions : (4)

P.T.O.

(i) eval()

(ii) type()

(iii) set()

(iv) strip()

(b) Explain the output/error in the code given below : (3)

(i) 13 + 5 ** 2 – 3 / 7

(ii) Z – 3

```
X, Y = Z, 5
X, Y = Y, X
print("X =", X,":: Y =", Y)
```

(iii)
```
myset = {"C++", "Java", "Python"}
myset.remove("Java 1")
print(myset)
```

(c) Write a function pattern(n) that prints n lines of the following pattern (use nested loops). (3)

6 5 4 3 2 1

5 4 3 2 1

4 3 2 1

3 2 1

2 1

1

Section B

2. Define a class Cost. The class should contain the following : (5)

   - data members: price (price of item), discount (percentage discount on the item)
   - method __init__() for initializing the data members
   - method computeCost(), which returns the discounted price of an item

3. Given the list L1 = [12, 23, 7, 35, 74, 18], use bubble sort to sort this list. Show the list after each iteration. (5)

4. (a) Given tuple t1 = (20, 10, 80, 40, 90, 60, 70)

   Give python code that perform the following :

   (i) prints every third element from the tuple t1

   (ii) concatenates tuple t2 = ('a', 'b', 'c') with t1 and prints its output (2)

   (b) Write a function validateAge(age). The function should use the assert statement to validate if age is between 24 and 60. (3)

5. Given a list L1 = [20, 10, 80, 40, 90, 60, 70]. Write one line Python statements for the following :

   (i) Sort list L1 in descending order

   (ii) Remove element 60 from L1

   (iii) Add the elements ["a", "b"] at the end of L1

   (iv) Print 2nd to 5th elements of L1

   (v) Reverses the order of elements in L1 (5)

6. Write a function countWords(sentence) that counts the occurrences of each word in the string sentence. Use the dictionary data type to maintain the count. (5)

(1000)