Code : 083

DELHI PUBLIC SCHOOL SURAT
Computer Science (Python)

Roll No: | | | | **Class: XI**

Maximum Marks: 70 **Time Allowed: 3 Hrs.**

Instructions:

- Please check that this question paper contains 7 questions.
- Answer the questions after **carefully reading** the text.
- Please write down the serial number of the question before attempting it.

1. Answer the following question: **[5]**

a) How do you declare a dictionary in python? Explain with an example. [1]

b) Underline all the errors in the following code: [2]

```
x=input("Enter a number")
if(abs(x)=x):
   print("You entered a positive number")
else:
   x=*-1
   print("Number made positive",x)
```

c) What is the difference between the following two block of code: [2]

(i)
```
if n>2:
    if n <6 :
        print "OK"
    else:
        print "NG"
```

(ii)
```
if n>2:
if n<6:
print "OK"
else:
print "NG"
```

2. Write the output of the following code: **[10]**

a)
```
i=5
j=7
x=0
i=i+(j-i)
x=j+i
print(x, ":" , i)
j=j**2
x=j+i
i=i+1
```

```
print(I , ":" , j)
```

b)
```
string="DO it @ 123"
Data=list(string)
for i in range(len(Data)):
    if(Data[i].isupper()):
        Data[i]=Data[i].lower()
    elif(Data[i].isspace()):
        Data[i]=Data[i+1]
print(Data)
```

c)
```
incr=1
ch = 65
for i in range(0,6,2):
    for j in range(0,incr+1):
        print(chr(ch),end=' ')
        ch+=1

    print()
    incr = incr + 1
```

d) What possible output(s) are expected from the following code ? Also specify the maximum values that can be assigned to each variable N.

```
import random
PLAY=[40,50,10,20]
ROUND=random . randint(2,3)
for J in range(ROUND,1,–1):
    print PLAY[J],":"
```

i. 20:10:
ii. 20:
iii. 20:10:50:
iv. 40:50:20:

3. Answer the following questions: **[12]**

a) What does a state signify? **[1]**

b) Draw a state transition diagram for an operation of Mobile Bill payment. **[3]**

c) Reduce the following expression: **(XY)' + X' + XY** **[2]**

d) Prove algebraically X.Y + X'.Z + Y.Z = X.Y + X'Z **[2]**

e) Prove using truth table (A + B + C) . (A' + B + C) = B + C **[2]**

f) Draw a logic circuit for the following expression: **[2]**

x'y' + z

4. Answer the following questions: **[8]**

a) Evaluate: [8]

i. $(B16)_{16}$= (…….)$_2$

ii. $(D1A)_{16}$=(……..)$_8$

iii. $(BB)_{16}$=(…….)$_{10}$

iv. $(55)_{10}$=(…….)$_2$

v. $(1001110)_2$=(…….)$_{10}$

vi. $(65)_8$=(…….)$_2$

vii. $(345)_8=(\ldots\ldots)_{16}$

viii. $(100100100)_2=(\ldots\ldots)_8$

5. Answer the following questions: **[12]**

a) Define the following: **[2]**

a) NoSql Database

b) MongoDb

b) Consider the following tables SALESPERSON and ITEM. Write SQL commands for the statements (i) to (vi) and give outputs for SQL queries (vii) to (x). **[10]**

Table: SALESPERSON

Code	NAME	SALARY	ITCODE
1001	TANDEEP JHA	60000	I2
1002	YOGRAJ SINHA	70000	I5
1003	TENZIN JACK	45000	I2
1005	ANOKHI RAJ	50000	I7
1004	TARANA SEN	55000	I7

Table: ITEM

ITCODE	ITEMTYPE	TURNOVER
I5	STATIONARY	3400000
I7	HOSIERY	6500000
I2	BAKERY	10090000

i. To display the CODE and NAME of all SALESPERSON having "I7" Item Type Code from the table SALESPERSON.

ii. To display NAME of all salesperson whose name starts with 'T'.

iii. To display detail of all Salesperson whose salary is greater than 60000.

iv. To display all details from table SALESPERSON in descending order of SALARY.

v. To display the number of SALESPERSON dealing in each TYPE of ITEM. (Use ITCODE for the same)

vi. To display NAME of all the salespersons from the SALESPERSON table along with their corresponding ITEMTYPE from the ITEM table.

vii. SELECT MAX(SALARY) FROM SALESPERSON;

viii. SELECT DISTINCT ITCODE FROM SALESPERSON;

ix. SELECT CODE,NAME, I.ITCODE FROM SALESPERSON S, ITEM I
WHERE S.ITCODE=I.ITCODE AND TURNOVER>=700000;

x. SELECT SUM(SALARY) FROM SALESPERSON WHERE ITCODE="I2";

6. Answer the following questions: **[8]**

a) What is Cyber Safety? Why is it important? **[2]**

b) What are Cookies? How are they used to track you? **[2]**

c) What are different types of threat to computer security? **[2]**

d) Define the following: **[2]**

i. Worm

ii. Spam mail

7. Answer the following questions: [**17]**

a) What will be the status of the following list after the First, Second and Third pass of the bubble sort method used for arranging the following elements in descending order? **[3]**
Note: Show the status of all the elements after each pass very clearly underlining the changes.

52, -10, 34, 60, -19, 20

b) Write a program to input a list POINTS and add those values in the list of POINTS, which are ending with 0. **[2]**

c) Write a program to input a tuple as NUMBERS and print the sum of odd numbers in the tuple. **[2]**

d) Write a program that repeatedly asks the user to enter product name and price. Store all of these in a dictionary whose keys are Product name and value is the price. From the entered dictionary print average price and product name which has the highest price. **[2]**

e) Write a menu driven program to input a string and do the following on user's choice: **[4]**

- **i.** Print all the words starting with a vowel
- **ii.** Print all the words which have more than four characters in it
- **iii.** Print the string in Uppercase

f) Write a menu driven program to input a matrix and do the following on user's choice: **[4]**

- **i.** Print sum of each row
- **ii.** Print sum of each column
- **iii.** Print all the diagonal elements

--------END OF EXAMINATION--------