

Sample Paper

Half Yearly Examination 2019-20

Class : XII

Subject : Computer Science

M.M. : 70

Time: 3.15 Hours

- Please check that this question paper contains 6 printed pages.
- Please check that this question paper contains 2 Sections.
- Please write down the Serial Number of the question before attempting it.
- 15 minutes time has been allotted to read this question paper and will not write any answer on the answer script during this period.

SECTION - A

1. Answer the following question based on Programming and Computational Thinking:

- a) Name the modules to which the following functions belong: [2]
- i. `ceil()`
 - ii. `uniform()`
- b) Differentiate between break and continue statement with the help of an example. [2]
- c) Observe the following Python code very carefully and rewrite it after removing all syntactical errors with each correction underlined. [2]

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

execmain()
```

- d) Convert the following for loop into while loop: [2]
- ```
for k in range (10, 20, 5):
 print (k)
```

e) Write the output of the following Python code:

[2]

```
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
```

f) Write the output of the following Python code:

[2]

```
x=5
def func2():
 global x
 x=3
 x=x+1
 print (x)
 print (x)
func2()
```

g) Write the output of the following Python program code:

[2]

```
Data =['D','o',' ','I','t',' ','@',' ','1','2','3',' ','!']
for i in range(len(Data)-1):
 if (Data[i].isupper()):
 Data[i]=Data[i].lower()
 elif (Data[i].isspace()):
 Data[i]=Data[i+1]
print Data
```

h) Write the definition of a function Reverse(X) in Python, to display the elements in reverse order such that each displayed element is the twice of the original element (element \* 2) of the List X in the following manner:

[2]

Example:

If List X contains 7 integers is as follows:

| X[0] | X[1] | X[2] | X[3] | X[4] | X[5] | X[6] |
|------|------|------|------|------|------|------|
| 4    | 8    | 7    | 5    | 6    | 2    | 10   |

After executing the function, the array content should be displayed as follows:

20      4      12      10      14      16      8

- i)** Find errors in the following code and correct the code by rewriting it and underlining the corrections: [2]

```
x=int("Enter value for x:")
for in range[0,11]:
 if x=y:
 print (x+y)
 else:
 Print (x-y)
```

- j)** Write a function countmy( ) in Python to read the text file "DATA.TXT" and count the number of times "my" occurs in the file. [3]

For example if the file "DATA.TXT" contains:

"This is my website. I have displayed my preferences in the CHOICE section."

The countmy( ) function should display the output as:

"my occurs 2 times".

- k)** Write a program to write those lines which starts with the character 'p' from one text file to another text file. [3]

- l)** Explain the two strategies employed by Python for evaluating the efficiency of programs. [2]

- m)** Kritika was asked to accept a list of even numbers but she did not put the relevant condition while accepting the list of numbers. You are required to write a user defined function oddtoeven(L) that accepts the List L as an argument and convert all the odd numbers into even by multiplying them by 2. [2]

- n)** What is Python matplotlib? What are the various types of plots offered by matplotlib. [any 4] [3]

- o)** Consider the following Stack of characters implemented as an array of 4 elements: [3]

```
STACK=["A","J","P","N"]
```

Describe the Stack as the following operations take place:

1. STACK.pop()
2. STACK.append(K)
3. STACK.append(S)
4. STACK.pop()
5. STACK.append(G)

What will be the final characters in STACK?

- p) Write a Python program to accept a 3-digit number and display whether it is a palindrome. [3]
- q) Write a Python program to display a bar chart of the number of students in a class. Use different colors for each bar. [4]
- Sample data:  
 Class : I, II, III, IV, V, VI, VII, VIII, IX, X  
 Strengths : 40, 43, 45, 47, 49, 38, 50, 37, 43, 39
- r) What do you understand by Django? Why do we require virtual environment? Discuss the Django architecture. [4]

### SECTION - B

#### 2. Answer the following question based on Data Management:

- a) Name two Aggregate (Group) functions of SQL. [2]
- b) Differentiate between DDL & DML commands. Identify DDL & DML commands from the following:  
 (UPDATE, SELECT, ALTER, DROP) [3]
- c) Consider the table: [2]

**Table : Company**

| SID  | SALES |
|------|-------|
| S101 | 20000 |
| S103 | NULL  |
| S104 | 10000 |
| S105 | 15000 |

What output will be displayed by the following SQL statement?

SELECT AVG(SALES) from company;

- d) Observe the table 'Club' given below: [2]

**Club**

| Member_id | Member_Name | Address   | Age | Fee  |
|-----------|-------------|-----------|-----|------|
| M001      | Sumit       | New Delhi | 20  | 2000 |
| M002      | Nisha       | Gurgaon   | 19  | 3500 |
| M003      | Niharika    | New Delhi | 21  | 2100 |
| M004      | Sachin      | Faridabad | 18  | 3500 |

- i. What is the cardinality and degree of the above given table?
- ii. If a new column Contact\_No has been added and three more members have joined the club then how these changes will affect the degree and cardinality of the above given table.

e) Consider the following relations MobileMaster & MobileStock:

[8]

**MobileMaster**

| M_Id  | M_Company | M_Name   | M_Price | M_Mf_Date  |
|-------|-----------|----------|---------|------------|
| MB001 | Samsung   | Galaxy   | 4500    | 2013-02-12 |
| MB003 | Nokia     | N1100    | 2250    | 2011-04-15 |
| MB004 | Micromax  | Unite3   | 4500    | 2016-10-17 |
| MB005 | Sony      | XperiaM  | 7500    | 2017-11-20 |
| MB006 | Oppo      | SelfieEx | 8500    | 2010-08-21 |

**MobileStock**

| S_Id | M_Id  | M_Qty | M_Supplier           |
|------|-------|-------|----------------------|
| S001 | MB004 | 450   | New Vision           |
| S002 | MB003 | 250   | Praveen Gallery      |
| S003 | MB001 | 300   | Classic Mobile Store |
| S004 | MB006 | 150   | A-one Mobiles        |
| S005 | MB003 | 150   | The Mobile           |
| S006 | MB006 | 50    | Mobile Centre        |

Write the SQL query for questions from (1) to (4) & write the output of SQL command for questions from (5) to (8) given below:

1. Display the Mobile company, Mobile name & price in descending order of their manufacturing date.
2. List the details of mobile whose name starts with 'S'.
3. Display the Mobile supplier & quantity of all mobiles except 'MB003'.
4. To display the name of mobile company having price between 3000 & 5000.
5. SELECT M\_Id, SUM(M\_Qty) FROM MobileStock GROUP BY M\_Id;
6. SELECT MAX(M\_Mf\_Date), MIN(M\_Mf\_Date) FROM MobileMaster;

7. `SELECT M1.M_Id, M1.M_Name, M2.M_Qty, M2.M_Supplier FROM MobileMaster M1, MobileStock M2 WHERE M1.M_Id=M2.M_Id AND M2.M_Qty>=300;`
8. `SELECT AVG(M_Price) FROM MobileMaster;`

Sunil Nehra 9828672864

- f) Mr. Manav, a database administrator in “Global Educational and Training Institute” has created following table named “Training” for the upcoming training schedule: [6]

| Training_Id | Name        | Email_Id         | Topic            | City      | Fee   |
|-------------|-------------|------------------|------------------|-----------|-------|
| ND01        | Mr. Rajan   | raj@gmail.com    | Cyber Security   | New Delhi | 10000 |
| GU01        | Ms. Urvashi | urv@yahoo.com    | ICT in Education | Gurugram  | 15000 |
| FD01        | Ms. Neena   | neena@rediff.com | Cyber Security   | Faridabad | 12000 |
| ND02        | Mr. Vinay   | NULL             | ICT in Education | New Delhi | 13000 |
| GU02        | Mr. Naveen  | nav@gmail.com    | Cyber Security   | Gurugram  | NULL  |

Help him in writing SQL query for the following purpose:

1. To display all the cities where Cyber Security training is scheduled along with its fee.
2. To add a column feedback with suitable data type.
3. To count the number of ‘Trainees’ topic wise.
4. List all unique Topics in table ‘Training’.
5. Modify the Fee and increase it by 500, for all whose fee is less than 15000.
6. To delete all records from the table ‘Training’.

- g) Observe the table named “Training” given above carefully and predict the output of the following queries: [2]

1. `select count(Training_Id) from training where email_id like '%gmail% ';`
2. `select AVG (Fee) from training where Topic = 'Cyber Security';`