PRE- BOARD EXAMINATION-2019-20
CLASS-XII
SUBJECT-COMPUTER SCIENCE

TIME:3 HRS MM:70

<u>GENERAL INSTRUCTIONS:</u>

All Questions are compulsory
Programming Language: Python

Q.1.(a) Differentiate between mutable and immutable objects in Python language with example. **(2)**

(b) Identify and write the name of the module to which the following functions belong: **(1)**

    (i) ceil()   (ii) randint()

(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) Find the output of the following: **(2)**

```
L1 = [100,900,300,400,500]
START = 1
SUM = 0
```

```
for C in range(START,4):
    SUM = SUM + L1[C]
    print(C, ":", SUM)
SUM = SUM + L1[0]*10
print(SUM)
```
(3)

(e) Write the output of the following Python program code:

```
def Change List():
    L=[]
    L1=[]
    L2=[]
    for i in range(1,10):
        L.append(i)
    for i in range(10,1,-2):
        L1.append(i)
    for i in range(len(L1)):
        L2.append(L1[i]+L[i])
    L2.append(len(L)-len(L1))
    print(L2)
Change List()
```

(f) Study the following program and select the possible output(s) from the (2) options (i) to (iv) following it. Also, write the maximum and the minimum values that can be assigned to the variable Y.

```
import random
X= random.random()
Y= random.randint(0,4)
print(int(X),":",Y+int(X)
```

(i) 0 : 0

(ii) 1 : 6

(iii) 2 : 4   (iv) 0 : 3

Q.2.(a) List one difference between List and Dictionary data type.   (1)

(b) Write a method in python to read lines from a text file DIARY.TXT and   (2)
display those lines which start with alphabet 'P'.

(c) Write a python program to plot the algebraic equation: 10x + 14.   (2)

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

Example:

If List X contains 7 integers 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: If List

20   4   12   10   14   16   8

(e) Write a python program to access a function inside a function.   (3)

OR

Write a python function to sum all the numbers in a list.

Sample List: [4,6,3,5,6]

Expected Output:24

(f) Write PUSH(Names) and POP(Names) methods in Python to add Names   (4)
and Remove Names considering them to act as a PUSH and POP
operations in Stack.

(g) Observe the following code and answer the questions that follow: (1)

File=open("Mydata","a")_____#Blank1

File. close()

(i) What type (Text/Binary) of file is Mydata?

(ii) Fill in Blank 1 with a statement to write "ABC" in the file "Mydata". (1)

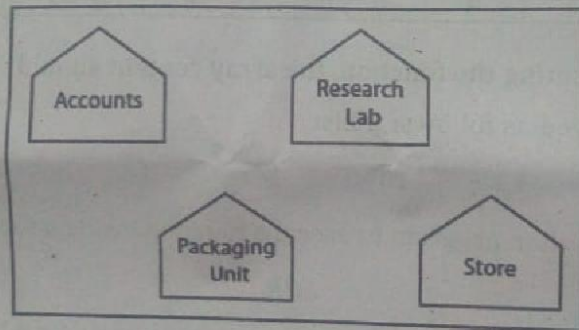(h) Write the specific purpose of functions used in plotting:

i) plot()

ii) Legend() (1)

(i) _____ is a plotting library used for 2D graphics in Python programming Language (1)

(j) Stack is a _____ type of data structure. (1)

Q.3.(a) Write any one advantage and one disadvantage of Coaxial cable. (1)

(b) Riana Medicos Centre has set up its new centre in Dubai. It has four buildings as shown in the diagram given below: (4)

Distances between various buildings are as follows:

Accounts to Research	55 m
Accounts to Store	150 m
Store to Packaging Unit	160 m
Packaging Unit to	60 m
Accounts to Packaging	125 m
Store to Research Lab	180 m

Number of computers:

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries:

(i) Suggest the type of network established between the buildings.

(ii) Suggest the most suitable place (*i.e.*, building) to house the server of this organization.

(iii) Suggest the placement of the following devices with justification:

(a) Repeater   (b) Hub/Switch

(iv) Suggest a system (hardware/software) to prevent unauthorized access to or from the network.

(c) Expand the following: **(2)**

(i)   VoIP

(ii)   SMTP

(iii)   TDMA

(iv)   TCP/IP

(d) How IP address differ from MAC address?   **(1)**

(e) Write the purpose of following commands   **(2)**

1. whois

2. ipconfig

3. nslookup

4. ping

(f) What is a cloud?   **(1)**

(g) What are the effects of Network Congestion?   **(1)**

(h) Write differences between IP v-4 and IPv-6.   **(3)**

Q.4.(a) Write the difference between GET and POST method.   **(1)**

(b) What are the basic steps to connect Python with MYSQL using table **(2)** Members present in the database 'Society'?

(c) Write a MySQL-Python connectivity to retrieve data, one record at a time, **(3)** from city table for employees with id less than 10.

(d) What is the role of Django in website design? **(1)**

(e) (a) Write the steps to connect with database "testdb" with Python **(2)** programming. **(1)**

(f) Which method is used to retrieve all rows and single row? **(1)**

(g) Consider the table 'empsalary'.

eid	esalary
101	40000
102	NULL
104	51000
107	NULL

Write SQL query to display the employee details where salary is not null.

(h) Table COACHING is shown below. Write commands in SQL for (i) to (iii) **(4)** and output for (iv) and (v)

Table: Transact

TRNO	ANO	AMOUNT	TYPE	DOT
T001	101	2500	Withdraw	2017-12-21
T002	103	3000	Deposit	2017-06-01
T003	102	2000	Withdraw	2017-05-12
T004	103	1000	Deposit	2017-10-22
T005	101	12000	Deposit	2017-11-06

Q.5.

(i)   To display minimum amount transaction from the table.   (4)

(ii)   To display total amount withdrawn from table.

(iii)   To display number of deposited transaction.

(iv)   SELECT ANO, COUNT(*), MIN(AMOUNT) FROM TRANSACT

        GROUP BY ANO HAVING COUNT(*)> 1

(v)   SELECT COUNT(*), SUM(AMOUNT) FROM TRANSACT

        WHERE DOT <= '2017-06-01';

Q.5. (a)   What are the environmental issues of E-waste?   (2)

(b)   What do you understand by the term Plagiarism? Explain with example.   (2)

(c)   What is Identity Theft? How to prevent this?   (2)

(d)   List down some points about Societal changes introduced by technology.   (2)

(e)   Name some threats to computer security   (1)

(.)   Define and name some open source software   (1)