MODEL TEST PAPER–II

CLASS XII
COMPUTER SCIENCE (083)

TIME: 3 hrs **M.M: 70**

General Instructions:

- All questions are compulsory.
- Question paper is divided into 4 sections A, B, C and D.
  - ☞ Section A: Unit-1
  - ☞ Section B: Unit-2
  - ☞ Section C: Unit-3
  - ☞ Section D: Unit-4

SECTION–A

1. (a) Name the Python Library modules which need to be imported to invoke the following functions: (1)

(i) fabs()

(ii) bar()

(b) What is None in Python? (1)

(c) Predict the output: (1)

```
for i in range(1, 10, 3):
    print(i)
```

(d) Rewrite the following code in Python after removing all syntax error(s). Underline each correction done in the code. (2)

```
a = int(input("Value:"))
b = 0
for c in range(1, a, 2)
b + = c
if c%2 = 0:
    Print(c*3)
    Else: print(c*) print(b)
```

(e) Which string method is used to implement the following? (2)

(i) To count the number of characters in the string.

(ii) To change the first character of the string in capital letter.

(iii) To check whether the given character is a letter or a number.

(iv) To change lower case to upper case letter.

(v) To change one character into another character.

(f) Consider the following function calls with respect to the function definition. Identify which of these will cause an error and why? (3)

```
def calculate(a, b=5, c=10):
    return a*b-c
```

(i) calculate(12, 3)

(ii) calculate(c=50, 35)

(iii) calculate(20, b=7, a=15)

(iv) calculate(x=10, b=12)

(g) What possible output(s) is/are expected to be displayed on screen at the time of execution of the program from the following code? Also specify the maximum values that can be assigned to each of the variables **start and end**. (2)

```
import random
POINTS=[20,40,10,30,15]; POINTS=[30,50,20,40,45]
start=random.randint(1,3)
end=random.randint(2,4)
for c in range(start,end+1):
    print(POINTS[c],"#",)
```

(i) 50# 20#	(ii) 40# 30#
(iii) 50# 40# 20#	(iv) 20# 40# 45#

2. (a) Write a statement in Python to open a text file STORY.TXT so that new contents can be added at the end of it. (1)

(b) 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".

(c) Name the Python Library modules which need to be imported to invoke the following functions: (1)

(i) load ()

(ii) pow ()

(d) Consider the following function headers. Identify the correct statement: (1)

(i) def correct(a=1, b=2, c):

(ii) def correct(a=1, b, c=3):

(iii) def correct(a=1, b=2, c=3):

(iv) def correct(a=1, b, c):

(e) Name the function that you will call to create a line chart and Pie Chart. (1)

(f) Explain all file modes in Data File Handling in Python for Data Handling. (2)

OR

Write a function **countthe()** in Python to read the text file "DATA.TXT" and count the number of times "the" occurs in the file.

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

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

The **countthe()** function should display the output as:

"the occurs 2 times".

(g) Write a program in Python to search a number from the entered sorted list using binary search. (2)

OR

Write a method in Python to find and display the prime numbers between 2 to N. The value of N should be passed as an argument to the method.

(h) Write definition of a method EvenSum(NUMBERS) to add those values in the list of NUMBERS which are even. (2)

OR

Write definition of a method COUNTNOW(PLACES) to find and display those place names in which there are more than 5 characters.

For example:

If the list PLACES contains

```
["DELHI", "LONDON", "PARIS", "NEW YORK", "DUBAI"]
```

The following output should be displayed:

```
LONDON
NEW YORK
```

(i) Write a program which inputs two lists 'FirstName' and 'LastName' and returns answer in list 'name' with 'FirstName' and 'LastName' concatenated. (3)

OR

Write a user-defined function named Count() that will read the contents of a text file named "Report.txt" and count the number of lines which start with either "J" or "M" and display the count, e.g.,

In the following paragraph, there are 3 lines starting with "J" or "M":

"India is the fastest growing economy. India is looking for more investments from around the globe.

The whole world is looking at India as a great market. Most of the Indians can foresee the dizzy heights that India is capable of reaching."

(j) Write functions to perform insert (Enqueue) and delete (Dequeue) operations in a Queue containing Member details as given in the following definition of item node: (4)

Node

```
Member No  Integer,  Member Name String,  Age Integer
```

```
def isEmpty(Qu):
    if Qu==[]:
        return True
    else:
        return False
def Enqueue(Qu, item):
# write code to insert an item in the Queue

def Dequeue(Qu):
# write code to delete an item from the Queue
```

SECTION–B

3. (a) The underlined areas represent _____ in the MAC address given below- (1)

10:B5:03:63:2E:FC

(b) Daniel has to share the data among various computers of his two office branches situated in the same city. The network which is being formed in this process is _____. (1)

(c) Transmission capacity of a communication channel is termed as _____ of the channel. (1)

(d) The default port number for running django is _____ . (1)

(e) Differentiate between Bus Topology and Star Topology of Networks. What are the advantages and disadvantages of Star Topology over Bus Topology? (2)

(f) Write the expanded forms of the following abbreviated terms used in networking and communications: (2)

(i) SMTP
(ii) VoIP
(iii) GSM
(iv) WLL

(g) Explain the following terms: (3)

(i) MAC
(ii) DNS
(iii) URL

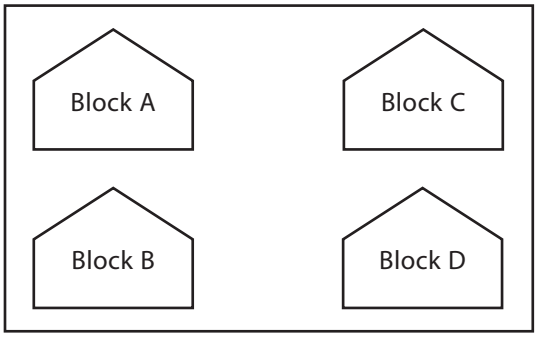
(h) Knowledge Supplement Organization has set up its new centre at Mangalore for its office and web-based activities. It has 4 blocks of buildings as shown in the diagram below: (4)

Centre to centre distances between various blocks:

Block A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m
Block A to Block D	170 m
Block B to Block D	125 m
Block A to Block C	90 m

Number of computers:

Block A	25
Block B	50
Block C	125
Block D	10



(i) Suggest the network implemented.

(ii) Suggest the most suitable place (*i.e.*, block) to house the server of this organization with a suitable reason.

(iii) Suggest the placement of the following devices with justification:
  (a) Repeater
  (b) Hub/Switch

(iv) The organization is planning to link its front office situated in the city in a hilly region where cable connection is not feasible. Suggest an economic way to connect it with reasonably high speed.

SECTION–C

4. (a) Which clause is used in MYSQL to specify filtering condition for groups? (1)

(b) Which function returns the total number of rows, including duplicates and NULL in a table. (1)

(c) Which function returns the lowest value from the given column or expression. (1)

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

(e) Differentiate between having and Group By clauses of a table with an example. (2)

(f) Differentiate between GET and POST method with examples. (2)

(g) Explain with the help of examples: (3)
  (i) Primary Key
  (ii) Foreign Key
  (iii) Candidate Key

(h) Consider the following tables ACTIVITY and COACH. Write SQL commands for the statements (i) to (iv). (4)

Table: ACTIVITY

ACode	ActivityName	ParticipantsNum	PrizeMoney	ScheduledDate
1001	Relay 100x4	16	10000	23-Jan-2004
1002	High jump	10	12000	12-Dec-2003
1003	Shot Put	12	8000	14-Feb-2004
1005	Long Jump	12	9000	01-Jan-2004
1008	Discus Throw	10	15000	19-Mar-2004

Table: COACH

PCode	Name	ScheduledDate
1	Ahmad Hussain	1001
2	Ravinder	1008
3	Janila	1001
4	Naaz	1003

(i) To display the name of all activities with their Acodes in descending order.

(ii) To display sum of PrizeMoney for each of the Number of participant groupings (as shown in column ParticipantsNum 10,12,16).

(iii) To display the coach's name and ACodes in ascending order of ACode from the table COACH.

(iv) To display the content of the GAMES table whose ScheduledDate is earlier than 01/01/2004 in ascending order of ParticipantNum.

SECTION–D

5. (a) Define Creative Commons. Where is this license useful? (1)

(b) What is phishing? (1)

(c) Differentiate between digital signature and digital certificate. Explain with examples. (2)

(d) What do you mean by web browser and web server? Explain with examples. (2)

(e) What do you mean by Wi-Fi and IR? Explain with examples. (2)

(f) What is firewall? Explain its use in modern scenario. (2)