ST. MARGARET SR. SEC. SCHOOL
MID TERM SAMPLE PAPAR 2023-24
COMPUTER SCIENCE (083)
CLASS XII

M.M: 70 **Time: 3Hrs**

General Instructions:

- **Please check this question paper contains 35 questions.**
- **The paper is divided into 4 Sections- A, B, C, D and E.**
- **Section A, consists of 18 questions (1 to 18). Each question carries 1 Mark.**
- **Section B, consists of 7 questions (19 to 25). Each question carries 2 Marks.**
- **Section C, consists of 5 questions (26 to 30). Each question carries 3 Marks.**
- **Section D, consists of 2 questions (31 to 32). Each question carries 4 Marks.**
- **Section E, consists of 3 questions (33 to 35). Each question carries 5 Marks.**
- **All programming questions are to be answered using Python Language only.**

Q.N.	SECTION A
1	Which of the following symbol is used in Python for single line comment? a. / b. /* c.// d. #
2	Write a statement in Python to declare a dictionary whose keys are 1, 2, 3 and values are month names respectively.
3	What possible outputs(s) 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 Lower and Upper. import random AR=[20,30,40,50,60,70]; Lower =random.randint(1,3) Upper =random.randint(2,4) for K in range(Lower, Upper +1): print (AR[K],end="#") (i) 10#40#70# (ii) 30#40#50# (iii) 50#60#70# (iv) 40#50#70#
4	Identify the valid arithmetic operator in Python from the following. a) ? b) < c) ** d) and
5	Name the built-in mathematical function / method that is used to return an absolute value of a number.
6	Consider the given expression: `not True and False or True` Which of the following will be correct output if the given expression is evaluated? (a) True (b) False (c) NONE (d) NULL

7	Which of the following is the correct way to call a function? a. my_func() b. def my_func() c. return my_func d. call my_func()
8	_____command is used to remove primary key from the table in SQL. (a) `update` (b)`remove` (c) `alter` (d)`drop`

9	Raghav is trying to write a tuple tup1 = (1,2,3,4,5) on a binary file **test.bin.** Consider the following code written by him.
	`import pickle`
	`tup1 = (1,2,3,4,5)`
	`myfile = open("test.bin",'wb')`
	`pickle._____#Statement 1`
	`myfile.close()`
	Identify the missing code in Statement 1.

10	_____is a non-key attribute, whose values are derived from theprimary key of some other table. (a) Primary Key (b) Foreign Key (c) Candidate Key (d) Alternate Key
11	What is the default file mode, when you open a file in PYTHON ?
12	Why is the module pickle used in a PYTHON program ?
13	The SELECT statement when combined with_____clause,returns records without repetition. (a) DESCRIBE (b) UNIQUE (c) DISTINCT (d) NULL
14	_____is a communication methodology designed to deliver both voice and multimedia communications over Internet protocol. (a) VoIP (b) SMTP (c) PPP (d)HTTP
15	What is the difference between opening the file with **a** and **W** mode .
16	Which function is used to display the total number of records from table in a database? (a) sum(*) (b) total(*) (c) count(*) (d)return(*)
	Q17 and 18 are ASSERTION AND REASONING based questions. Mark the correct choice as : (a) Both A and R are true and R is the correct explanation for A (b) Both A and R are true and R is not the correct explanation for A (c) A is True but R is False (d) A is false but R is True (e)
17	Assertion (A): CSV (Comma Separated Values) is a file format for datastorage which looks like a text file. Reason (R): The information is organized with one record on each lineand each field is separated by comma.

18 Assertion (A):- If the arguments in function call statement match the number and order of arguments as defined in the function definition,such arguments are called positional arguments.
Reasoning (R):- During a function call, the argument list first containsdefault argument(s) followed by positional argument(s).

Section- B

19 Find and write the output of the following python code(stating the reason for the output):

(i)
```
x = "abcdef"
i = "a"
while i in x:
    print(i, end = " ")
```

(ii)
```
x = 4.5
y = 2
print x//y
```

(iii) print (len(["hello",2, 4, 6]))

(iv) print (min(max(False,-3,-4), 2,7))

20 Write two points of difference between Circuit Switching and Packet switching.

OR

Write two points of difference between XML and HTML.

21 Explain the use of 'Foreign Key' in a Relational Database Management System. Give example to support your answer.

22 (a) Write the full forms of the following:
(i) SMTP (ii) PPP

(b) What is the use of TELNET?

23 Differentiate between count() and count(*) functions in SQL withappropriate example.

OR

Categorize the following commands as DDL or DML:INSERT, UPDATE, ALTER, DROP

24 Write the output of the queries (i) to (iv) based on the table,TECH_COURSE given below:

Table: TECH_COURSE

CID	CNAME	FEES	STARTDATE	TID
C201	Animation and VFX	12000	2022-07-02	101
C202	CADD	15000	2021-11-15	NULL
C203	DCA	10000	2020-10-01	102
C204	DDTP	9000	2021-09-15	104
C205	Mobile Application Development	18000	2022-11-01	101
C206	Digital marketing	16000	2022-07-25	103

```
(i)     SELECT DISTINCT TID FROM TECH_COURSE;
(ii)    SELECT TID, COUNT(*), MIN(FEES) FROM TECH_COURSE GROUP BY
   TID HAVING COUNT(TID)>1;
(iii)   SELECT CNAME FROM TECH_COURSE WHEREFEES>15000 ORDER
 BY CNAME;
(iv)    SELECT AVG(FEES) FROM TECH_COURSE WHERE
         FEES BETWEEN 15000 AND 17000;
```

25 **a.** Write the command to view all tables in a database.
b. Differentiate between Drop and Delete command

SECTION C

26 Write a function to check whether the given number is prime or not .

27 Predict the output of the following code fragment:

```
def check(n1=1, n2=2):
    n1=n1+n2
  n2+=1
        print(n1,n2)
  check()
  check(2,1)
  check(3)
```

28 a) Suppose content of 'Myfile.txt' is : **Ek Bharat Shreshtha Bharat**
What will be the output of the following code?

```
myfile = open("Myfile.txt") vlist
= list("aeiouAEIOU") vc=0
x = myfile.read() for y
in x:
    if(y in vlist): vc+=1
print(vc)
myfile.close()
```

b)Write the statement that opens a binary file record.bin in write mode and writes data from a list lst1 = [1,2,3,4] on the binary file?

29 Suppose content of 'Myfile.txt' is

Humpty Dumpty sat on a wall Humpty
Dumpty had a great fall
All the king's horses and all the king's men Couldn't
put Humpty together again

What will be the output of the following code?

```
myfile = open("Myfile.txt")
record = myfile.read().split()
print(len(record))
myfile.close()
```

30 Write a program to find all duplicates in a list.

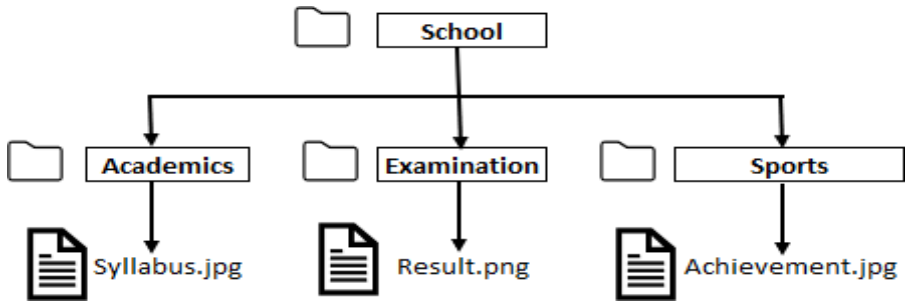
eg : if a =[1,2,3,2,1,5,6,5,5,5]

Output screenshot:

[1,2,5] have duplicates {1:2,2: 2,3:1,5:4, 6: 1}

SECTION D

31 (a) Consider the following directory structure. 1



Suppose root directory (School) and present working directory are the same. What will be the absolute path of the file Syllabus.jpg?

(b) What is mean by the parameters with respect to Functions ? How are local and global parameters different from each other ? 3

32 Why do we need to store the data inside files ? Differentiate between the following : (2+2)

(i) read () and readlines ()

(ii) seek () and tell () in files

SECTION E

33 Navdeep creates a table RESULT with a set of records to maintain the marks secured by students in Sem 1, Sem2, Sem3 and their division. After creation of the table, he has entered data of 7 students in the table.

ROLL_NO	SNAME	SEM1	SEM2	SEM3	DIVISION
101	KARAN	366	410	402	I
102	NAMAN	300	350	325	I
103	ISHA	400	410	415	I
104	RENU	350	357	415	I
105	ARPIT	100	75	178	IV
106	SABINA	100	205	217	II
107	NEELAM	470	450	471	I

Based on the data given above answer the following questions:

(i) Identify the most appropriate column, which can be considered as Primary key.

(ii) If two columns are added and 2 rows are deleted from the tableresult, what will be the new degree and cardinality of the above table?

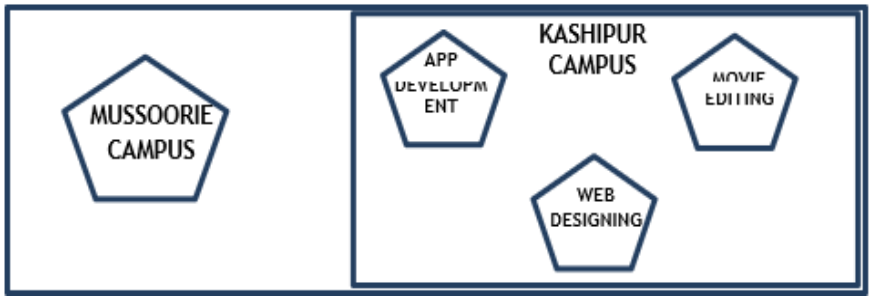
(iii) Write the statements to:

a. Insert the following record into the table
Roll No- 108, Name- Aadit, Sem1- 470, Sem2-444, Sem3-475, Div – I.

b. Increase the SEM2 marks of the students by 3% whosename begins with ‘N’.

c. Delete the record of students securing IV division.

34	MakeInIndia Corporation, an Uttarakhand based IT training company, is planning to set up training centres in various cities in next 2 years. Their first campus is coming up in Kashipur district. At Kashipur campus, they are planning to have 3 different blocks for App development, Web designing and Movie editing. Each block has number of computers, which are required to be connected in a network for communication, data and resource sharing. As a network consultant of this company, you have to suggest the best network related solutions for them for issues/problems raised in question nos.(i) to (v), keeping in mind the distances between various blocks/locations and other given parameters.
35	Write a program, which takes the data of 1000 employees of an organization and process this data to generate the Salary Report for 1000 employees, also print the data of all those employees , who have a salary more than 50000 , per month.



Distance between various blocks/locations:

Block	Distance
App development to Web designing	28 m
App development to Movie editing	55 m
Web designing to Movie editing	32 m
Kashipur Campus to Mussoorie Campus	232 km

Number of computers

Block	Number of Computers
App development	75
Web designing	50
Movie editing	80

(i) Suggest the most appropriate block/location to house the SERVER in the Kashipur campus (out of the 3 blocks) to get thebest and effective connectivity. Justify your answer.

(ii) Suggest a device/software to be installed in the KashipurCampus to take care of data security.

(iii) Suggest the best wired medium and draw the cable layout (Block to Block) to economically connect various blocks within the Kashipur Campus.

(iv) Suggest the placement of the following devices with appropriatereasons:

a. Switch / Hub

b. Repeater

(v) Suggest a protocol that shall be needed to provide Video Conferencing solution between Kashipur Campus and MussoorieCampus.