SAMPLE QUESTION PAPER - 1
Computer Science (083)
Class XII (2024-25)

Time Allowed: 3 hours   **Maximum Marks: 70**

General Instructions:

- This question paper contains 37 questions.
- All questions are compulsory. However, internal choices have been provided in some questions. Attempt only one of the choices in such questions.
- The paper is divided into 5 Sections- A, B, C, D and E.
- Section A consists of 21 questions (1 to 21). Each question carries 1 Mark.
- Section B consists of 7 questions (22 to 28). Each question carries 2 Marks.
- Section C consists of 3 questions (29 to 31). Each question carries 3 Marks.
- Section D consists of 4 questions (32 to 35). Each question carries 4 Marks.
- Section E consists of 2 questions (36 to 37). Each question carries 5 Marks.
- All programming questions are to be answered using Python Language only.
- In case of MCQ, text of the correct answer should also be written.

Section A

1. State true or false: **[1]**

   Do both the following represent the same list.
   ['a', 'b', 'c']
   ['c', 'a', 'b']

2. Which of the following is not an aggregate function?   **[1]**

   a) Min   b) With

   c) Avg   d) Sum

3. What is the best way to represent attributes in a large database?   **[1]**

   a) All of these   b) Concatenation

   c) Dot Representation   d) Relational-and

4. What will be the output of the following Python code?   **[1]**

   def add (num1, num2):
     sum = num1 + num2
   sum = add(20, 30)
   print(sum)

   a) None   b) Null

   c) 50   d) 0

5. Discuss the utility and significance of Tuples, briefly.   **[1]**

6. CDMA stands for?   **[1]**

a) Call Division Multiple Access   b) Channel Division Multiple Access

c) Cell Division Multiple Access   d) Code Division Multiple Access

7. To read the entire remaining contents of the file as a string from a file object infi, we use   **[1]**

a) infi.readlines( )   b) infi.read(all)

c) infi.readline( )   d) infi.read( )

8. Which command is used to display the name of existing databases?   **[1]**

a) show databases;   b) display databases;

c) result databases;   d) output databases;

9. Which operator performs pattern matching?   **[1]**

a) LIKE operator   b) BETWEEN operator

c) INTO operator   d) EXISTS operator

10. Write a line of code that writes "Hello world!" to a file opened with file object my file.   **[1]**

11. State true or false: **[1]**

In Python, a variable is a placeholder for data.

12. Process of removing an element from stack is called _____.   **[1]**

a) Evaluation   b) Push

c) Create   d) Pop

13. Differentiate between commands DROP TABLE and DROP VIEW in SQL.   **[1]**

14. A _____ is a network spread across a small area connecting various related devices such as laptop, mobile phone, wifi, printers etc.   **[1]**

a) WAN   b) MAN

c) PAN   d) LAN

15. Which of the following four code fragments will yield following output?   **[1]**

Ziva

Diva

Riva

[Notice blank lines in between]

Select all of the function calls that result in this output.

a) print('Ziva
   Diva
   Riva')   b) print('''ZivaDivaRiva''')

c) print('Ziva\nDiva\nRiva')   d) print('''Ziva
         \nDiva

\nRiva''')

16. Which of the following sublanguages of SQL is used to define the structure of the relation, deleting relations and relating schemas? **[1]**

    a) Relational Schema   b) DDL (Data Definition Language)

    c) DML (Data Manipulation Language)   d) Query

17. Find ODD parity bit for 11100011 **[1]**

    a) 1   b) 2

    c) 3   d) 0

18. Which command is used for finding the IP address and default gateway of your network? **[1]**

    a) netstat   b) ping

    c) ipconfig   d) ifconfig

19. **Assertion (A):** While creating series by specifying data as a scalar value, the index must be provided. **[1]**
Reason (R): The scalar value is repeated to match the length of the index.

    a) Both A and R are true and R is the correct explanation of A.   b) Both A and R are true but R is not the correct explanation of A.

    c) A is true but R is false.   d) A is false but R is true.

20. **Assertion (A):** By using "a" access mode, it appends the content to the file if the file already exists with the specified name. **[1]**
Reason (R): By using "w" access mode, It overwrites the existing file.

    a) Both A and R are true and R is the correct explanation of A.   b) Both A and R are true but R is not the correct explanation of A.

    c) A is true but R is false.   d) A is false but R is true.

21. **Assertion (A):** A function doesn't accept the parameter. **[1]**
Reason (R): The function block is started with the colon (:) and block statements must be at the same indentation.

    a) Both A and R are true and R is the correct explanation of A.   b) Both A and R are true but R is not the correct explanation of A.

    c) A is true but R is false.   d) A is false but R is true.

Section B

22. Define the following terms: **[2]**
   i. Amplitude modulation
   ii. Frequency modulation

23. Given below is a table Item in database Inventory. **[2]**

ItemID	ItemName	Quantity	UnitPrice
101	ABC	5	120
102	XYZ	7	70
103	PQR	8	65
104	XYZ	12	55

Riya created this table but forget to add column ManufacturingDate. Can she add this column after creation of table? If yes, write the code where user's name and password are system and test respectively.

24. To find the number is even or odd with compound statement. **[2]**

OR

Predict the output of the following code fragment.

b = 20
a = 90/b
print("value of a is :", a)

25. Which data will get added in table Company by following code? **[2]**

import mysql.connector
con = mysql.connector.connect(host = "localhost",user = "system",passwd = "hello",database = "connect")
cur = con.cursor()
sql = "insert into Company(Name, Dept, Salary) values (%s, %s, %s)"
val = ("ABC", "DBA", 35000)
cur.execute(sql, val)
con.commit()

26. Write a program that repeatedly asks from users some numbers until string 'done' is typed. The program should print the sum of all numbers entered. **[2]**

OR

Predict the output of following code fragment:
fruit = { }
f1 = ['Apple', 'Banana', 'apple', 'Banana']
for index in f1:
if index in fruit:
fruit [index] += 1
else:
fruit[index] =1
print(fruit)
print (len(fruit))

27. Write a program that check to see if the file name exists, it will give you an error message, if not, it will create the file. **[2]**

OR

Write a program to count the number of uppercase letters in a text file "Article.txt".

28. What are the errors in the following codes? Correct the code and predict output: **[2]**

i. total = 0;
   def sum(arg1, arg2):
   total = arg1 + arg2;
   print("Total:", total)
   return total;
   sum(10, 20);
   print("Total :", total)

ii. def Tot(Number) #Method to find Total
   Sum = 0
   for C in Range (1, Number + 1) :
   Sum += C
   RETURN Sum
   print (Tot[3]) #Function Calls
   print (Tot[6])

Section C

29. Consider a function with following header: **[3]**

    def info(object, spacing = 10, collapse = 1)

    Here are some function calls given below. Find out which of these are correct and which of these are incorrect stating reasons?

    For correct function call statements, specify the argument values too.

    i. info(obj1)

    ii. info(spacing=20)

    iii. info(obj2, 12)

    iv. info(obj11, object = obj12)

    v. info(obj3, collapse = 0)

    vi. info( )

    vii. info(collapse = 0, obj3)

    viii. info(spacing = 15, object = obj4)

    OR

    What will be the output of following programs?

    i. num = 1
       def myfunc():
       return num
       print(num)
       print(myfunc())
       print(num)

    ii. num = 1
       def myfunc():
       num = 10
       return num
       print(num)

```
        print(myfunc())
        print(num)
    iii. num = 1
        def myfunc():
        global num
        num = 10
        return num
        print(num)
        print(myfunc())
        print(num)
    iv. def display ():
        print ("Hello", end = ' ')
        display()
        print("there!")
```

30.   What do you understand by Union and Cartesian Product operations performed upon two relations?   **[3]**

<div align="center">OR</div>

a. A SQL table **BOOKS** contains the following column names:
   BOOKNO, BOOKNAME, QUANTITY, PRICE, AUTHOR
   Write the SQL statement to add a new column **REVIEW** to store the reviews of the book.

b. Write the names of any two commands of **DDL** and any two commands of **DML** in SQL.

31.   From the program code given below, identify the parts mentioned below :   **[3]**
   1. def processNumber(x):
   2. x = 72
   3. return x + 3
   4.
   5. y = 54
   6. res = processNumber(y)
   Identify these parts: function header, function call, arguments, parameters, function body, main program.

<div align="center">OR</div>

Answer the questions (i) to (iv) based on the following:

```
class Book
{
char Bno[20];
protected:
float Price;
public:
void GetB();
void ShowB();
};
class Member
{
char Mno[20];
```

```
protected:
char Name[20];
public:
void GetM();
void ShowM();
};
class Library : public Member, private Book
{
char Lname[20];
public:
void GetL();
void ShowL();
};
void main()
{
Library L;
}
```

  i. Which type of Inheritance out of the following is illustrated in the above example?

    - **Single Level Inheritance, Multilevel Inheritance, Multiple Inheritance**

  ii. Write the names of **all the data members,** which are directly accessible by the member function **GetL()** of class **Library.**

  iii. Write the names of **all the member functions,** which are directly accessible by the member function **ShowL()** of class **Library**.

  iv. Write the names of **all the members,** which are directly accessible by the object **L** of class **Library** declared in the **main()** function.

Section D

32. Write Addnew(Book) and Remove(Book) methods in Python to Add a new Book and Remove a Book from a List of Books, considering them to act as PUSH and POP operations of the data structure stack. **[4]**

<div align="center">OR</div>

Write a function to push any student's information to stack.

33. Write a point of difference between append **(a)** and write **(w)** modes in a text file. **[4]**
Write a program in Python that defines and calls the following user defined functions:

  i. Add_Teacher() : It accepts the values from the user and inserts the record of a teacher to a csv file 'Teacher.csv'. Each record consists of a list with field elements as **T_id, Tname** and **desig** to store teacher ID, teacher name and designation respectively.

  ii. Search_Teacher() : To display the records of all the PGT (designation) teachers.

34. Give output for following SQL queries as per given table(s): **[4]**

<div align="center">**Table** : CLUB</div>

COACH-ID	COACHNAME	AGE	SPORTS	DATEOFAPP	PAY	SEX
1.	KUKREJA	35	KARATE	27/03/1996	1000	M
2.	RAVINA	34	KARATE	20/01/1998	1200	F

3.	KARAN	34	SQUASH	19/02/1998	2000	M
4.	TARUN	33	BASKETBALL	01/01/1998	1500	M
5.	ZUBIN	36	SWIMMING	12/01/1998	750	M
6.	KETAKI	36	SWIMMING	24/02/1998	800	F
7.	ANKITA	39	SQUASH	22/02/1998	2200	F
8.	ZAREEN	37	KARATE	22/02/1998	1100	F
9.	KUSH	41	SWIMMING	13/01/1998	900	M
10.	SHAILYA	37	BASKETBALL	19/02/1998	1700	M

i. SELECT COUNT (DISTINCT SPORTS) FROM CLUB;

ii. SELECT MIN(AGE) FROM CLUB WHERE SEX = "F";

iii. SELECT AVG(PAY) FROM CLUB WHERE SPORTS = "KARATE";

iv. SELECT SUM(PAY) FROM CLUB WHERE DATEOFAPP > {31/01/98};

OR

Write SQL queries for (a) to (d) based on the tables CUSTOMER and TRANSACT given below:

Table : CUSTOMER

CNO	NAME	GENDER	ADDRESS	PHONE
1001	Suresh	MALE	A-123, West Street	9310010010
1002	Anita	FEMALE	C-24, Court Lane	9121211212
1003	Harjas	MALE	T-1, Woods Avenue	9820021001

Table : TRANSACT

TNO	CNO	AMOUNT	TTYPE	TDATE
T1	1002	2000	DEBIT	2021-09-25
T2	1003	1500	CREDIT	2022-01-28
T3	1002	3500	CREDIT	2021-12-31
T4	1001	1000	DEBIT	2022-01-10

a. Write the SQL statements to delete the records from table TRANSACT whose amount is less than 1000.

b. Write a query to display the total **AMOUNT** of all **DEBITs** and all **CREDITs**.

c. Write a query to display the **NAME** and corresponding **AMOUNT** of all **CUSTOMERs** who made a transaction type (**TTYPE**) of **CREDIT**.

d. Write the SQL statement to change the Phone number of customer whose CNO is 1002 to 9988117700 in the table CUSTOMER.

35. Consider the table MobileMaster **[4]**

M_Id	M_Company	M_Name	M_Price	M_Mf_Date
MB001	Samsung	Galaxy	4500	2014-02-12
MB002	Nokia	N1100	2250	2011-04-15
MB003	Sony	Experia M	9500	2017-11-20
MB004	Oppo	SelfieEx	8500	2010-08-21

Write the Python code for the following

  i. To display details of those mobiles whose price is greater than 8000.

 ii. To increase the price of mobile Samsung by 2000.

Section E

36. Knowledge Supplement Organisation has set up its new center at Mangalore for its office and web-based **[5]** activities. It has 4 blocks of buildings as shown in the diagram below:
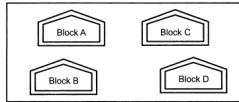
Center to center distances between various blocks

Block A to Block B	50 m
Block B to Block C	150 m
Block C to Block D	25 m

Number of Computers

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

  i. What type of network will be formed if all blocks are connected?

 ii. Suggest the most suitable place (i.e., block) to house the server of this organisation 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.

37. Write SQL queries for (i) to (vii) on the basis of tables given below: **[5]**

Table: PRODUCTS

PID	PNAME	QTY	PRICE	COMPANY	SUPCODE
101	DIGITAL CAMERA 14X	120	12000	RENBIX	SOI
102	DIGITAL PAD 11 i	100	22000	DIGI POP	S02
104	PEN DRIVE 16 GB	500	1100	STOREKING	SOI
106	LED SCREEN 32	70	28000	DISPEXPERTS	S02
105	CAR GPS SYSTEM	60	12000	MOVEON	S03

Table: SUPPLIERS

SUPCODE	SNAME	CITY
S01	GET ALL INC	KOLKATA
S03	EASY MARKET CORP	DELHI

S02	DIGI BUSY GROUP	CHENNAI

i. To display the details of all the products in ascending order of product names (i.e., PNAME).

ii. To display product name and price of all those products, whose price is in the range of 10000 and 15000 (both values inclusive).

iii. To display the number of products, which are supplied by each supplier, i.e., the expected output should be;

S01 2

S02 2

S03 1

iv. To display the price, product name, and quantity (i.e., qty) of those products which have a quantity of more than 100.

v. To display the names of those suppliers, who are either from DELHI or from CHENNAI.

vi. To display the name of the companies and the name of the products in descending order of company names.

vii. Obtain the outputs of the following SQL queries based on the data given in tables PRODUCTS and SUPPLIERS above.

a. SELECT DISTINCT SUPCODE FROM PRODUCTS;

b. SELECT MAX (PRICE), MIN (PRICE) FROM PRODUCTS;

c. SELECT PRICE*QTY FROM PRODUCTS WHERE PID = 104;

d. SELECT PNAME, SNAME FROM PRODUCTS P, SUPPLIERS S WHERE P. SUPCODE = S. SUPCODE AND QTY >100;

OR

Write SQL queries for (i) to (iv) and find outputs for SQL queries (v) to (viii), which are based on the tables:

TABLE: BOOK

Code	BNAME	TYPE
F101	The Priest	Fiction
L102	German easy	Literature
C101	Tarzan in the lost world	Comic
F102	Untold story	Fiction
C102	War heroes	Comic

TABLE: MEMBER

MNO	MNAME	CODE	ISSUEDATE
M101	RAGHAV SINHA	LI 02	2016-10-13
M103	S ARTHAKJ OHN	FI 02	2017-02-23
M102	ANISHA KHAN	C101	2016-06-12

i. To display all details from table MEMBER in descending order of ISSUEDATE.

ii. To display the BNO and BNAME of all Fiction Type books from the table Book.

iii. To display the TYPE and number of books in each TYPE from the table BOOK.

iv. To display all MNAME and ISSUEDATE of those members from table MEMBER who have books issued (i.e., ISSUEDATE) in the year 2017.

v. SELECT MAX (ISSUEDATE) FROM MEMBER

vi. SELECT DISTINCT TYPE FROM BOOK

vii. SELECT A.CODE, BNAME, MNO. MNAME FROM BOOK A. MEMBER B WHERE A.CODE= B.CODE

viii. SELECT BNAME FROM BOOK WHERE TYPE NOT IN ("FICTION", "COMIC")

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Section A

1.
   (b) False

   Explanation:

   False

   The lists are ordered.

2.
   (b) With

   Explanation:

   With is not an aggregate function. The avg is used to find the average, the sum is used to sum the number of values and min is used to find the minimum.

3.
   (b) Concatenation

   Explanation:

   Example inst sec and student sec

4. **(a)** None

   Explanation:

   None

5. The tuple is similar to lists but the value of the items stored in the list can be changed, whereas the tuple is immutable, and the value of the items stored in the tuple cannot be changed.

6.
   (d) Code Division Multiple Access

   Explanation:

   CDMA stands for Code Division Multiple Access. In this, each user is allocated a unique code sequence, that is used to encode/decode the original data.

7.
   (d) infi.read( )

   Explanation:

   read( ) function reads the whole file and returns the text of the file as a string.

8. **(a)** show databases;

   Explanation:

   show databases;

9. **(a)** LIKE operator

Explanation:

LIKE operator is used in the WHERE clause allows us a search based operation on a pattern.

10. myfile.write("Hello world!")

File object is myfile, and write() function writes string "Hello World!" into the file.

11.

(b) False

Explanation:

Variables are containers for storing data values whereas a placeholder is a pre-formatted container into which content can be placed.

12.

(d) Pop

Explanation:

The process of removing an element from the stack is called Pop operation.

13. DROP TABLE statement is used to delete the table and all its data from the database entirely. The syntax for DROP TABLE is DROP TABLE ;
DROP VIEW Removes an existing view from a database. DROP VIEW statement is used to remove a view or an object view from the database. The syntax for DROP VIEW is DROP VIEW ;

14.

(c) PAN

Explanation:

A Personal Area Network is a computer network organized around an individual person. Personal area networks typically involve a mobile computer, a cell phone and/or a handheld computing device.

15.

(d) print('"Ziva
\nDiva
\nRiva"')

Explanation:

print('"Ziva
\nDiva
\nRiva"')

16.

(b) DDL (Data Definition Language)

Explanation:

DDL (Data Definition Language) is the language which performs all the operation in defining structure of relation.

17.

(d) 0

Explanation:

Parity refers to the number of bits set to 1 in the data item

Even parity - an even number of bits are 1

Odd parity - an odd number of bits are 1

A parity bit is an extra bit transmitted with a data item, chose to give the resulting bits even or odd parity

Odd parity - data: 11100011, parity bit 0

18.

(c) ipconfig

Explanation:

ipconfig command displays all network interfaces and their configurations, including IP addresses, subnet masks and default gateway.

19.

(c) A is true but R is false.

Explanation:

In order to create a Pandas series from an array with an index, we have to provide index with the same number of elements as it is in array.

In order to create a Pandas series from scalar value, an index must be provided. The scalar value will be repeated to match the length of index.

20.

(b) Both A and R are true but R is not the correct explanation of A.

Explanation:

In append mode, python creates a new file with the specified name if no such file exists. It appends the content to the file if the file already exists with the specified name. In write mode, python creates a new file with the specified name if no such file exists. It overwrites the existing file.

21.

(d) A is false but R is true.

Explanation:

A function can accept one or more parameters (arguments), and it can be optional. The function block starts with a colon (:), and block statements must be at the same indentation, otherwise, there would be an indentation error in your program.

Section B

22. i. **Amplitude modulation**: In amplitude modulation, the amplitude of the carrier wave is varied in proportion to the message signal, and the other factors like phase and frequency remain constant.

    ii. **Frequency modulation**: In Frequency modulation, a radio wave known as carrier is modulated in frequency by the signal that is to be transmitted.

23. Yes, she can add new column after creation of table.

    mycon = mysql.connector.connect(host = "localhost",user = "system",passwd = "test",datab

    cursor = mycon.cursor()

    cursor.execute("ALTER TABLE Item ADD ManufacturingDate Date NOT NULL")

    mycon.close()


24. ```
    n = int(input("Enter a number:"))
    print("The number is ",n)
    d = n%2
    if (d == 0):
        print ("Remainder on division by 2 is :", d)
        print ("The number is an even number.")
    else:
        print("Remainder on division by 2 is : ", d)
        print("The number is an odd number.")
    ```

    Output

    Enter a number:45

    The number is 45

    Remainder on division by 2 is: 1

    The number is an odd number.

    <div align="center">OR</div>

    value of a is : 4.5

25. "ABC", "DBA", 35000

26. ```
    #Unknown Number of Numbers to Sum
    total = 0
    s = input ('Enter a number or "done":')
    while s ! = 'done' :
    num = int(s)
    total = total + num
    ```

```
s = input('Enter a number or "done": ')
print ('The sum of entered numbers is', total)
```
<center>OR</center>

```
{'Apple' : 1}
{'Apple' : 1, 'Banana' : 1}
{'Apple' : 1, 'Banana' : 1, 'apple' : 1}
{'Apple' : 1, 'Banana' : 2, 'apple' : 1}
3
```

27. ```
import os
if os.path.isfile('test.txt'):
print ("You are trying to create a file that already exists!")
else :
f = open("text.txt",'w')
```
If the text file test exists, the program will print "You are trying to create a file that already exists!" else the file is opened in write mode, to create a new file with length 0.

<center>OR</center>

```
fileObject = open("Article.txt",r)
count = 0
str = fileObject.read()
for char in str:
if char.isupper():
count += 1
fileObject.close()
print ("Number of uppercase characters are ", count)
```

28. i. • Wrong indentation for return statement. The return statement should be indented inside the function.
   • Semicolons should be avoided (3 statements have it). In Python, semi-colons are not needed to end the statement.

   ii. • Range() is not a valid function; it should be range()
   • RETURN is not a valid keyword. It should be return.
   • Function calls use parentheses, i.e., ( ) (not square brackets[ ]) to pass values. Thus Function calls for Tot() would be as: Tot(3) and Tot(6).

<center>**Section C**</center>

29. i. **Correct** - obj1 is for positional parameter **object**; spacing gets its default value of 10 and **collapse** gets its default value of 1. The function call would become info(obj, 10, 1).

ii. **Incorrect** - Required positional argument (object) missing; required arguments cannot be missed. This function call is incorrect.

iii. **Correct** - Required parameter object gets its value as **obj2**; **spacing** gets value 12 and for skipped argument **collapse**, default value 1 is taken. The function call would become info(obj2, 12, 1), which is correct.

iv. **Incorrect** - Same parameter object is given multiple values - one through positional argument and one through keyword(named) argument. The same parameter cannot have multiple values in a function call. Therefore, this function call is incorrect.

v. **Correct** - Required parameter **object** gets its value as **obj3**; **collapse** gets value 0 and for skipped argument **spacing**, default value 10 is taken. The function call would be info(obj3, 10,0), which is correct.

vi. **Incorrect** - Required parameter **object's** value cannot be skipped. Therefore, this function call is incorrect.

vii. **Incorrect** - Positional arguments should be before keyword arguments. obj3 should be passed before spacing and collapse values.

viii. **Correct** - Required argument **object** gets its value through a keyword argument.

OR

These are the outputs to the above code segments:

i. 1
   1
   1

ii. 1
    10
    1

iii. 1
     10
     10

iv. Hello there!

30. **Cartesian Product** is called the CROSS PRODUCT or CROSS JOIN. It combines the tuples of one relation with all the tuples of the other relation. The Cartesian product of two relations **A** and **B** is written as **A** $\times$ **B**. e.g, given two relations **Student** and **Instructor** as shown below:

Student

Stud#	Stud-Name	Hosteler
S001	Meenakshi	Y
S002	Radhika	N

S003	Abhinav	N

Instructor

Inst#	Inst-Name	Subject
101	K. Lai	English
102	R.L. Arora	Maths

The cartesian product of these two relations, **Student** $\times$ **Instructor**, will yield a relation as :

Stud#	Stud-Name	Hosteler	Inst#	Inst-Name	Subject
S001	Meenakshi	Y	101	K. Lai	English
S001	Meenakshi	Y	102	R.L. Arora	Maths
S002	Radhika	N	101	K. Lai	English
S002	Radhika	N	102	R.L. Arora	Maths
S003	Abhinav	N	101	K. Lai	English
S003	Abhinav	N	102	R.L. Arora	Maths

Union. The union operation produces a third relation that contains tuples from both the operand relations which must be union-compatible. To denote the union of two relations X and Y, we write as $X \cup Y$ which will contain all tuples of X and all tuples of Y in it.

OR

a. **Adding a New Column "REVIEW":** To add a new column named "REVIEW" to the existing "BOOKS" table, we can use the following SQL statement:

ALTER TABLE BOOKS ADD REVIEW VARCHAR (255);

b. ▪ **DDL Commands:** Two common Data Definition Language (DDL) commands are:
   - CREATE TABLE: Used to create a new table.
   - ALTER TABLE`: Used to modify the structure of an existing table.

   ▪ **DML Commands:** Two common Data Manipulation Language (DML) commands are:
   - INSERT INTO: Used to add new records to a table.
   - UPDATE: Used to modify existing records in a table.

31.

Function header	def processNumber(x) :	in line 1
Function call	processNumber (y)	in line 6
Arguments	y	in line 6
Parameters	x	in line 1

Function body	x = 72 return x + 3	in lines 2 and 3
Main program	y = 54 res = processNumber(y)	in lines 5 and 6

OR

 i. Multiple Inheritance

 ii. Lname of class Library
    Name of class Member
    Price of class Book

 iii. GetL() of class Library
    GetM(), ShowM() of class Member
    GetB(), ShowB() of class Book

 iv. GetL(), ShowL() of class Library
    GetM(), ShowM() of class Member

Section D

32. Book = [ ]
   def Addnew (Books, Name):
     Book.append(Name)
     print("Book", "Name", "inserted")
     def Remove (Books) :
       if Books == [ ] :
         print ("stack is empty")
       else :
         print ("Book ",Books.pop(), "deleted")

OR

   def push (stack):
   s = [ ]
   print "STACK BEFORE PUSH"
   display(stack)
   s.append(input("Enter student rollno?"))
   s.append(raw_input("Enter student name"))
   s.append(raw_input("Enter student grade"))
   stack.append(s)
   def display (stack):

```
l=len (stack)
print ("STACK CONTENTS")
for i in range(1-1,-1,-1):
print(stack[i])
stack = [ ]
print ("Creating Stack")
n=input("Enter the number of students")
for i in range (n)
student = [ ]
student.append (input("Enter student rollno?"))
student.append(raw_input("Enter student name"))
student. append(raw_input("Enter student grade"))
stack.append(student)
push(stack)
display(stack)
```

33. Difference between append **(a)** and write **(w)** modes in a text file:

a (append) mode - To open the file to write the content at the bottom(or end) of existing content. It also creates the file, if it does not exist.

whereas

w (write) mode - To create a new file to write the content in it. It overwrites the file, if it already exists.

```
import csv
def Add_Teacher():
    fout=open("Teacher.csv","a",newline="\n")
    T_id=int(input("Enter Teacher id: "))
    Tname=input("Enter Teacher name: ")
    desig=input("Enter Designation: ")
    rec=[T_id,Tname,desig]
    csvw=csv.writer(fout)
    csvw.writerow(rec)
    fout.close()

def Search_Teacher():
    fin=open("Teacher.csv")
    csvr=csv.reader(fin)
    for record in csvr:
        if record[2]=="PGT":
```

```
        print(record)
    fin.close()

  Add_Teacher()
  Search_Teacher()
```

34. OUTPUT
    i. 4
    ii. 34
    iii. 1100
    iv. 7800

<div align="center">OR</div>

a. Delete records from table TRANSACT where the amount is less than 1000:
   - **DELETE FROM TRANSACT WHERE AMOUNT < 1000;**
b. Display the total AMOUNT of all DEBITs and all CREDITs:
   - **SELECT TTYPE, SUM(AMOUNT) AS TotalAmount FROM TRANSACT GROUP BY TTYPE;**
c. Display the NAME and corresponding AMOUNT of all CUSTOMERs who made a transaction type (TTYPE) of CREDIT:
   - **SELECT C.NAME, T.AMOUNT FROM CUSTOMER C INNER JOIN TRANSACT T ON C.CNO = T.CNO WHERE T.TTYPE = 'CREDIT';**
d. Change the Phone number of customer whose CNO is 1002 to 9988117700 in the table CUSTOMER:
   - **UPDATE CUSTOMER SET PHONE = '9988117700' WHERE CNO = 1002;**

35. i.
```
import mysql.connector as mydb
mycon=mydb.connect(host="localhost",user="root",passwd="system",database="Admir
cursor=mycon.cursor()
sql="SELECT * FROM MobileMaster WHERE M_Price>8000"
try:
   cursor.execute(sql)
   display=cursor.fetchall()
   for i in display:
      print (i)
except:
   mycon.rollback()
mycon.close()
```

ii. import mysql.connector as mydb
   mycon=mydb.connect(host="localhost",user="root",passwd="system",database="Admi
   cursor = mycon.cursor()
   sql = "UPDATE MobileMaster SET M_Price=M_Price+2000 WHERE M_Company='S
   try:
      cursor.execute(sql)
      mycon.commit()
   except:
      mycon.rollback()
   mycon.close()

Section E

36. i. LAN
   ii. Block C. The most suitable place/block to house the server of this organisation would
       be Block C, as this block contains the maximum number of computers, thus decreasing
       the cabling cost for most of the computers as well as increasing the efficiency of the
       maximum computers in the network.
   iii. a.
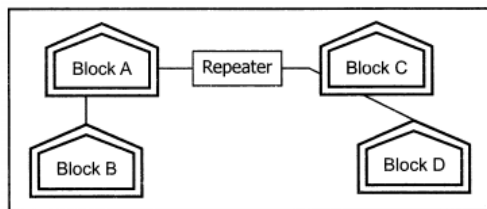
   b.
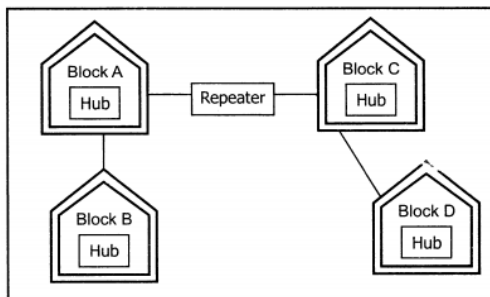
       For Layout 1, since the cabling distance between Blocks A and C, and that between B
       and C are quite large, so a repeater each, would ideally be needed along their path to
       avoid loss of signals during the course of data flow in these routes.
       In the layout 2, a hub/switch each would be needed in all the blocks, to interconnect
       the group of cables from the different computers in each block.
   iv. The most economic way to connect it with a reasonable high speed would be to use
       radio wave transmission, as they are easy to install, can travel long distances, and
       penetrate buildings easily, so they are widely used for communication, both indoors and
       outdoors. Radio waves also have the advantage of being omni directional, which is they

can travel in all the directions from the source, so that the transmitter and receiver do not have to be carefully aligned physically.

37. i. SELECT * FROM PRODUCTS ORDER BY PNAME ASC; (* bydefault show all the values)

   ii. SELECT PNAME, PRICE FROM PRODUCTS WHERE ((PRICE = > 10000) AND (PRICE = < 15000));

   iii. SELECT SUPCODE, COUNT (PID) FROM PRODUCTS GROUP BY SUPCODE;

   iv. SELECT PRICE, PNAME, QTY FROM PRODUCTS WHERE (QTY > 100);

   v. SELECT SNAME FROM SUPPLIERS WHERE ((CITY = "DELHI") OR (CITY = "CHENNAI"));

   vi. SELECT COMPANY, PNAME FROM PRODUCTS ORDER BY COMPANY DESC;

   vii. a. S03

      b. 28000
         1100

      c. 550000

      d.

PNAME	SNAME
DIGITAL CAMERA 14X	GETALL INC
PENDRIVE 16 GB	GETALL INC

OR

   i. SELECT * FROM MEMBER ORDER BY ISSUEDATE DESC

   ii. SELECT Code, BNAME FROM BOOK WHERE TYPE 'Fiction'

   iii. SELECT COUNT(*), TYPE FROM BOOK GROUP BY TYPE

   iv. SELECT MNAME, ISSUEDATE FROM MEMBER WHERE ISSUEDATE Like '2017 %'

   v. MAX (ISSUE DATE) 2017-02-23

   vi. DISTINCT (TYPE)
      Fiction
      Literature
      Comic

   vii.

CODE	BNAME	MNO	MNAME
L102	German easy	M101	RAGHAV SINHA
F102	Untold Story	M103	SARTHAK JOHN
C101	Tarzan in the lost world	M102	ANISHA KHAN

   viii. BNAME
      German easy