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SAMPLE PAPERS
CBSE EXAM 2025

20 Sets

Class : 12th
Sub : Computer Science

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Sample Paper 01

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False

    "Multiple elements can be added at the end of list by the append method".

2. Identify the output of the following code snipped :
    ```
    s = "Wonders of World"
    print(s.count('o') + s.index('o'))
    ```
    (a) 3   (b) 4

    (c) 2   (d) 1

3. Which of the following are sequence of character data?

    (a) Lists   (b) Tuples

    (c) Strings   (d) Dictionaries

4.  ```
    a = 1.0
    b = 1.0
    a is b # Line 1
    ```
    Output of Line 1 will be

    (a) False   (b) True

    (c) 1.0   (d) 0.0

5. What will be the output of the following code snippet?

```
text = "Data Science"
print(text[-3::-3])
```

6.
```
a = 6
b = 5.5
sum = a+b
print(sum)
print(type (sum))
```

(a) 11.5

<class 'float'>

(b) 10.5

<class 'float'>

(c) None

<class 'int'>

(d) None of these

7. Which constraint is used to specify a condition for a field to accept only certain values?

(a) NULL

(b) PRIMARY KEY

(c) CHECK

(d) NOT NULL

8. Which of the following are random number generators ?

(a) randint()

(b) randrange()

(c) random()

(d) All of these

9. Which device is used to connect two different types of networks?

(a) modem

(b) repeater

(c) bridge

(d) gateway

10. Write the missing statement to complete the following code:

```
logfile = open("log.txt", "r")
content = logfile.read(200)
first_line = logfile.readline()
logfile.close()
```

11. State whether the following statement is True or False:

The else block in Python is executed only if no exception occurs in the try block.

12. In which file, no delimiters are used for line and no translations occur?

(a) Text file

(b) Binary file

(c) CSV file

(d) None of these

13. What is the purpose of logical operators in programming?

14. In files, there is a key associated with each record which is used to differentiate among different records. For every file, there is atleast one set of keys that is unique. Such a key is called

(a) primary key   (b) prime attribute

(c) index key   (d) unique key

15. Which of the following is a correct syntax to add a column in SQL command?

(a) `ALTER TABLE table_name ADD column_name data_type;`

(b) `ALTER TABLE ADD column_name data_type;`

(c) `ALTER table_name ADD column_name data_type;`

(d) None of the above

16. In complex number a + ib, a represents as

(a) real part   (b) imaginary part

(c) special part   (d) None of these

17. A column storing Name of a department in a table Emp will be of type

(a) int   (b) date

(c) float   (d) varchar

18. The........keyword sorts the records in ascending order by default.

(a) LIKE   (b) UPDATE

(c) ORDER   (d) ORDER BY

19. What is the purpose of the write() method in Python, and what type of data does it take as an argument to perform its function?

Directions : (Q.Nos.-20 and 21) are Assertion and Reason based Questions.

20. Assertion (A) : Built-in functions are predefined in the system and can be directly used in any program.
Reason (R) : id( ) and type( ) are built-in functions in Python.

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

(d) A is false but R is true.

21. Assertion (A) : The CSV files are like TEXT files and are comma separated value files.
Reason (R) : The data stored in CSV files are separated by comma by default. Although the delimiter can be changed.

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

(d) A is false but R is true.

CLICK HERE TO SEE ANSWERS

SECTION - B

22. Seema was asked to accept a list of even numbers ,but she did not put the relevant condition while accepting the list of numbers. She wrote a user defined function odd to even (L) that accepts the list L as an argument and converts all the odd numbers into even by multiplying them by 2.

    ```
    def oddtoeven (L)
    for i in range (size(L)):
        if (L[i]%2! == 0)
            L[i]= L[1] ** 2
        print (L)
    ```

    There are some errors in the code . Rewrite the correct code.

23. Observe the code and write the output

    (a) ``Nodia publication'.
        count('hant', 0, 10)

    (b) dic = {}
    ```
    dic[(1, 2, 4)] = 8
    dic[(4, 2, 1)] = 10
    dic[(1, 2)] = 24
    sum = 0
    for i in dic:
        sum = sum + dic[i]
    print(sum)
    ```

24. How are E-mail and chat applications different?

    or

    How are LAN and MAN different?

25. Write about the terms degree and cardinality of a table.

26. (a) Write the full forms of
       (i) URL
       (ii) VoIP
    (b) Write the use of SMTP.

27. Find the output of following code.
    ```
    dic = {"Nitin": (21, "NIIT"), "Ankit": (15, "NIIT")}
    print("The original dictionary :", str(dic))
    result = [(key, i, j) for key, (i, j) in dic.items()]
    print("The list after conversion :", str(result))
    ```

    or

    What output will be generate when the following Python code is executed?
    ```
    def ChangeList ():
        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)
ChangeList()
```

28. Differentiate between DROP and DELETE commands of SQL.

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

Identify any two DML commands from the following and also explain.
ALTER , INSERT , UPDATE , DROP , CREATE

SECTION-C

29. Write a function countEU() in Python, which should read each character of a text file. IMP.TXT should count and display the occurrence of alphabets E and U (including small cases e and u too).

e.g. If the file content is as follows :
Pinaky has gone to his friend's house.
His friend's name is Ravya. Her house is 12 km from Pinaky's house.
The countEU() function should display the output as
E : 8
U : 3

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

Write a Python program to find the longest word in file "status.txt". If contents of status.txt are Welcome to your one-step solutions for all your study, practice and assessment need for various competitive and recruitment examinations and school segment. We have been working tirelessly for over a decade to make sure that you have best in class study resources because you deserve SUCCESS AND NOTHING LESS...
Output should be
Longest word : examinations

30. Priya has created a dictionary with names as keys and marks as values for 6 students. Write a program with separate user-defined functions to perform the following operations.

(a) Push the keys (name of the student) of the dictionary into a stack, where the corresponding value (marks) is greater than 75.

(b) Pop and display the content of the stack.

For example If the sample content of the dictionary is as follows
R={"OM":76, "JAI":45, "BOB":89, "ALI":65, "ANU":90, "TOM":82}
The output from the program should be
TOM ANU BOB OM

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

Rohit has a list of 10 integers. Write a program with separate user-defined functions to perform the specified operations on this list..

(a) Traverse the content of the list and push the even numbers into a stack.

(b) Pop and display the content of the stack.

For example, If the sample content of the list is as follows
N = [12, 13, 34, 56, 21, 79, 98, 22, 35, 38]
Sample Output of the code should be:
38 22 98 56 34 12

31. Consider the following tables - STUDENT and STREAM :

TABLE: STUDENT

SCODE	NAME	AGE	STRCDE	POINTS	GRADE
101	Amit	16	1	6	NULL
102	Arjun	13	3	4	NULL
103	Zaheer	14	2	1	NULL

TABLE: STREAM

STRCDE	STRNAME
1	SCIENCE+COMP
2	SCIENCE+ BIO
3	SCIENCE+ECO
4	COMMERCE+MATHS

What will be the ouput of the following statement?

```
SELECT NAME, STRNAME FROM STUDENT S, STREAM ST WHERE S.STRCDE=ST.STRCDE;
```

or

Write the output for SQL queries (i) to (iii), which are based on the table ITEMS.

TABLE: ITEMS

Code	IName	Qty	Price	Company	TCode
1001	DIGITAL PAD 12i	120	11000	XENITA	T01
1006	LED SCREEN 40	70	38000	SANTORA	T02
1004	CAR GPS SYSTEM	50	2150	GEOKNOW	T01
1003	DIGITAL CAMERA 12X	160	8000	DIGICLICK	T02
1005	PEN DRIVE 32 GB	600	1200	STOREHOME	T03

(i) `SELECT MAX(Price), MIN(Price) FROM ITEMS;`

(ii) `SELECT Price * Qty AS AMOUNT`
    `FROM ITEMS WHERE Code=1004;`

(iii) `SELECT DISTINCT TCode FROM ITEMS;`

SECTION-D

32. (a) Find the output of the following Python program:

```
def makenew (mystr):
  newstr = ""
  count = 0
  for i in mystr:
    if count%2!=0:
      newstr = newstr + str (count)
    else:
      if islower (i):
        newstr = newstr + upper (i)
      else:
        newstr = newstr + i
    count + = 1
  newstr = newstr + mystr [:1]
  print("The new string is:",
                        newstr)
makenew("sTUdeNT")
```

(b) Consider the table Student whose fields are

Scode	Name	Age	Strcde	Points	Grade
101	Amit	16	1	6	NULL
102	Arjun	13	3	4	NULL
103	Zaheer	14	2	1	NULL
104	Gegen	15	5	2	NULL
105	Kumar	13	6	8	NULL

Write the Python code to update grade to 'A' for all these students who are getting more than 8 as points.

The table structure is as follows :
Scode : integer
Name : varchar
Age : integer
Strcde : integer
Points : integer
Grade : varchar
Note the following to establish the connection between Python and MySQL:
Host : localhost
Username : Admin
Password : Admin@123
The table exists in MySQL database as : Student

or

(a) Write a Python program to remove the characters of odd index values in a string.

(b) Consider the table MobileStock with following fields

`M_Id. M_Name, M_Oty, M_Supplier`

Write the Python code to fetch all records with fields M_Id, M_Name and M_Supplier from database Mobile.

CLICK HERE TO SEE ANSWERS

Consider:

host : localhost

UserName : root

Password : system

Database : Mobile

33. Consider the following tables GARMENT and FABRIC. Write SQL commands for the statements (i) to (iv).

TABLE: GARMENT				
GCODE	**DESCRI-PTION**	**PRICE**	**FCODE**	**READY-DATE**
10023	PENCIL SKIRT	1150	F03	19-DEC-08
10001	FORMAL SHIRT	1250	F01	12-JAN-08
10012	INFORMAL SHIRT	1550	F02	06-JUN-08
10024	BABY TOP	750	F03	07-APR-07
10090	TULIP SKIRT	850	F02	31-MAR-07
10019	EVENING GOWN	850	F03	06-JUN-08
10009	INFORMAL PANT	1500	F02	20-OCT-08
10007	FORMAL PANT	1350	F01	09-MAR-08
10020	FROCK	850	F04	09-SEP-07
10089	SLACKS	750	F03	20-OCT-08

TABLE: FABRIC	
FCODE	**TYPE**
F04	POLYSTER
F02	COTTON
F03	SILK
F01	TERELENE

(i) To display GCODE and DESCRIPTION of each GARMENT in descending order of GCODE.

(ii) To display the details of all the GARMENTs, which have READYDATE in between 08-DEC-07 and 16-JUN-08 (inclusive of both the dates).

(iii) To display the average PRICE of all the GARMENTs. Which are made up of FABRIC with FCODE as F03.

(iv) To display FABRIC wise highest and lowest price of GARMENTs from GARMENT table.

   (Display FCODE of each GARMENT alongwith highest and lowest price.)

34. Red Pandas Info-systems has its 4 blocks of buildings. The number of computers and distances between them is given below :
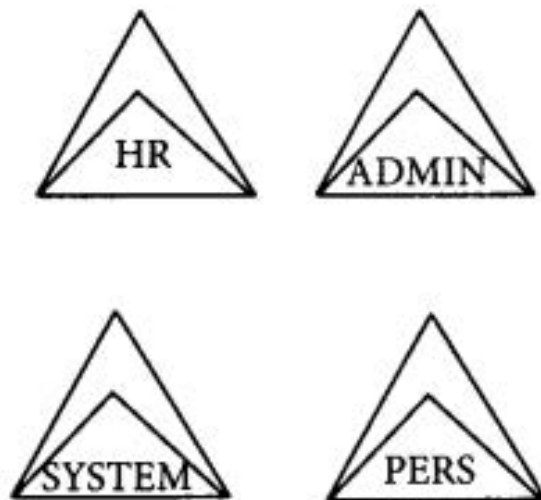
Building	Number of Computers
HR	15
ADMIN	100
SYSTEM	25
PERS	30

Building	Distance
HR -Admin	10 m
HR- System	50 m
HR- Pers	750 m
Admin- System	300 m
Admin- Pers	20 m
System-Pers	250 m

Answer the following questions with respect to the above :

(i)   Suggest a suitable cable layout for the network.

(ii) Suggest the best place to house the server of the network.

(iii) Which topology should be used to connect computers in each building?

(iv) What kind of network will be formed here? (LAN/MAN/WAN)

35. What is CSV file?

Write a program using two functions :

(a) addCustomer( ): To write Customer code, Customer name and Amt in file "cust.csv".

The details of the customers are as follows :

['CustCode', 'CustName', 'Amount']

['001', 'Nihir', '8000']

['104', 'Akshay', '5000']

(b) readCustomer( ): To read the details of the customers and display them.

<p align="center">or</p>

When do we use CSV file?

Write a program using following functions :

(a) getInventory() : Write code to accept as many inventory records and store them to the csv file Inventory.csv storing records of inventory as per following structure

36. PCode   Invname   Price   Reorder

(b) Display() : To display the detail that store in Inventory.csv

SECTION - E

37. Consider the table MOVIE DETAILS given below

<table>
<tr><th colspan="5">Table : MOVIEDETAILS</th></tr>
<tr><th>MOVIEID</th><th>TITLE</th><th>LANGUAGE</th><th>RAT-ING</th><th>PLAT-FORM</th></tr>
<tr><td>M001</td><td>Minari</td><td>Korean</td><td>5</td><td>Netflix</td></tr>
<tr><td>M004</td><td>MGR Magan</td><td>Tamil</td><td>4</td><td>Hotstar</td></tr>
<tr><td>M010</td><td>Kaagaz</td><td>Hindi</td><td>3</td><td>Zee5</td></tr>
<tr><td>M011</td><td>Harry Potter and the Chamber of Secrets</td><td>English</td><td>4</td><td>Prime Video</td></tr>
<tr><td>M015</td><td>Uri</td><td>Hindi</td><td>5</td><td>Zee5</td></tr>
<tr><td>M020</td><td>Avengers: Endgame</td><td>English</td><td>4</td><td>Hotstar</td></tr>
</table>

(i) Identify the degree and cardinality of the table.

(ii) Which field should be made the primary key? Justify your answer.

(iii) Write statements to :

(a) Delete the records whose language is "English"

(b) Add a new record : "M050", "Palki","Hindi", 5, "Amazon Prime".

<p align="center">or (Option for part (iii) only)</p>

Write statements to :

(a) Add a new column "DAYS" of type integer

(b) Remove the column "RATING"

38. Below is a program to delete the line having word (passed as argument). Answer the questions that follow to execute the program successfully.

```
import ......
def filedel (word):
    file1 = open ("Python. txt ",
                          "......")
    nfile = open ("algo1.txt", "w")
    while True:
      line = file1.readline( )
      if not line:
         break
      else :
         if word in line :
           ......
      else :
         print(line)
         nfile......(line)
      file1.close()
      nfile.close()
filedel ('write')
```

(i) Name the module that should import in Line 1.

(ii) In which mode, above program should open the file to delete the line?

(iii) Fill the blank in Line 11 and Line 14.

(iv) Suggest an alternative way to open and read the file without using.

(v) Explain what happens if the specified word is not found in any line of "Python.txt".

END

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Sample Paper 02

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False

    "Given a dictionary Studict, the statement Studict.items() displays only the keys of the items."

2. Given the list L = [10, 20, 30, 40, 50], the result of print(L[-2]) is:

    (a) 20   (b) 40

    (c) 40   (d) 30

3. The method used to get the position of file pointer is

    (a) pos()   (b) get()

    (c) seek()   (d) tell()

4. This function is used to calculate total occurrence of given elements of list.

    (a) len()   (b) sum()

    (c) count()   (d) extend()

5. What will be the output of the following code snippet?

```
text = "Artificial Intelligence"
print(text[3:15:4])
```

Continue on next page......

6. You can repeat the elements of the tuple using which operator?

   (a) *   (b) +

   (c) **   (d) %

7. The rule of referential integrity is based on...........

   (a) Primary key   (b) Foreign key

   (c) Alternate key   (d) None of these

8. Which method retrieves the next row from the result set as a tuple?

   (a) fetchone ()   (b) fetchall ()

   (c) fetchmany ()   (d) rowcount

9. Which of the following command displays the attributes of a table along with their types and sizes?

   (a) Alter   (b) Show structure

   (c) Show create table   (d) View structure

10. Write the missing statement to complete the following code:

```
file = open("sample.txt", "r")
line1 = file.readline()
last_data = file.read()
file.close()
```

11. State whether the following statement is True or False:

The `except` block in Python is executed only when an exception occurs in the `try` block.

12. Which command is used to add records to a table?

   (a) ADD   (b) APPEND

   (c) ADDRECORD   (d) INSERT

13. In a............topology, the nodes are connected by separate cables.

   (a) Star   (b) Bus

   (c) Tree   (d) Mesh

14. Given a list Lst = [25, 60, 15, 40, 75]. What will be the output of Lst[: :]?

   (a) [25, 60, 15, 40, 75]   (b) [ ]

   (c) Error   (d) [25]

15. Which module is to be imported to use the floor() function?

   (a) statistics   (b) matplotlib

   (c) random   (d) math

16. Which function is used to convert string into tuple?

(a) string()   (b) tup()

(c) tuple()   (d) str_tuple()

17. In which mode can a file be opened for both reading and writing?

(a) r   (b) r+

(c) a   (d) None of these

18. The..........clause can be used as an alternative to multiple OR.

(a) IN   (b) BETWEEN

(c) NOT   (d) range

19. The purpose of the primary key in a database is to

(a) unlock the database   (b) provide a map of the data

(c) uniquely identify a record   (d) establish constraints on database operations

Directions : (Q.Nos. 20 and 21) are Assertion and Reason based Questions.

20. Assertion (A) : To use the randint() function , the random module needs to be included in the program.
Reason (R) : Some functions are present in modules and to use them the respective module needs to be imported.

(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) : The contents of a Binary file are not directly interpretable.
Reason (R) : Modes in which binary files can be opened are suffixed with 'b' like : rb/wb etc.

(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.

(a) A is true but R is false.

(c) A is false but R is true.

SECTION - B

22. Find the error in following (s).

```
L1 = [7, 2, 3, 4]      Statement 1
L2 = L1 + 2            Statement 2
L3 = L1 * 2            Statement 3
L = L1.pop(7)          Statement 4
```

CLICK HERE TO SEE ANSWERS

23. (a) Observe the code and write the output:
```
t = 'APPLE'
t1 = tuple(t)
print(t1)
```
(b) Predict the output of the following code
```
x = (2, 3, 4)
y = (3, 4)
t = x + y
print(t)
```

24. Name two switching techniques used to transfer data between two terminals (computers).

or

Arrange the following network in ascending order of their area:

LAN, PAN, WAN, MAN

25. Differentiate between an attribute and a tuple with an example.

26. (a) Write the hill forms of

(i) WVVW

(ii) TCP/IP

(b) List down the types of computer networks.

27. Identify the output of the following Python code.
```
D = {1: "One", 2: "Two", 3: "Three"}
L = [ ]
for K, V in D.items():
    if V[0] = = "T":
    L.append (K)
print(L)
```
or

Identify the output of the following Python statement.
```
lst1 = [10, 15, 20, 25, 30]
lst1.insert(3, 4)
lst1.insert(2, 3)
print (lst1[- 5])
```

28. Describe the following terms

(i) Domain

(ii) DB2

or

Identify commands/functions for the following actions :

(i) To add a new column to a table.

(ii) To get the sum of all values in a column of a table.

SECTION - C

29. Write a function Del() to delete the 4th word from a text file school.txt.

or

Write a function countmy( ) in Python to read the text file "Data.txt" and count the number of times "my" occurs in the file.

For example If the file contents are:

My first book was. Me and My Family.

It gave me chance to be known to the world.

The output of the function should be

No. of times "my" occur : 2

30. Write Push (contents) and Pop (contents) methods in Python to add numbers and remove numbers considering them to act as Push and Pop operations of stack.

or

Write the Push operation of stack containing person names. Notice that the name should only accept characters, spaces and period (.) except digits. Assume that Pname is a class instance attribute.

31. Write a user-defined function find-name (name), where name is an argument in Python to delete phone number from a dictionary phone-book on the basis of the name, where name is the key.

or

Given below is a code to open a text file and perform some operations on it. Answer questions with respect to the code given

```
myfile=open("detail.txt", "r")
s =..........        Line 2
print(s)
myfile.close( )
```

(i) In which mode is the file opend?

(ii) If the entire file is to be read, write a statement in place of Line 2.

(iii) What is the original code performing?

SECTION - D

32. Does python create a file itself if the file doesn't exist in the memory? Illustrate your answer with an example:

Write a program using following functions :

(a) inputStud() :To input details of as many students and add them to a csv file "college.csv" without removing the previous records.

   SrNo   Studname   City   Percentage

(b) readCollege() : To open the file "college.csv" and display records whose city is "Kolkata"

or

Write a statement to create a data.txt file with the following text.

Python file handling is very interesting and useful.

Write a python code using two functions as follows

(a) removerow( ) : To remove a record from the college file "College.csv" having following structure.

   SrNo   Studname   City   Percentage

(b) getCollege( ) : To read the records of the college file "College.csv" and display names of students whose names start with a lowercase vowel.

33. (a) Consider the tables CARS and SUPPLIER given below. What will be the output of the statement given?

TABLE: CARS						
Ccode	Car-Name	Make	Color	Capa-city	Cha-rges	Scode
501	A-star	Suzuki	RED	3	14	1
503	Indigo	Tata	SILVER	3	12	2
502	Innova	Toyota	WHITE	7	15	2
509	SX4	Suzuki	SILVER	4	14	2
510	C-Class	Merc-edes	RED	4	35	4

Table : SUPPLIER	
Scode	Sname
1	Great Suppliers
2	Himalayan Vehicles
3	Road Motors
4	Speed

SELECT CarName, Sname, Charges FROM CARS C, SUPPLIER S WHERE C.Scode= S. Scode AND Charges > 15;

(b) Write the output for SQL queries (i) to (iv), which are based on the table CARDEN.

TABLE: CARDEN					
Ccode	CarName	Make	Color	Capa-city	Charges
501	A-star	Suzuki	RED	3	14
503	Indigo	Tata	SILVER	3	12
502	Innova	Toyota	WHITE	7	15
509	SX4	Suzuki	SILVER	4	14
510	C-Class	Mercedes	RED	4	35

(i) SELECT COUNT(DISTINCT Make) FROM CARDEN;

(ii) SELECT COUNT(*) Make FROM CARDEN;

(iii) SELECT CarName FROM CARDEN WHERE Capacity = 4;

(iv) SELECT SUM (Charges) FROM CARDEN WHERE Color = "SILVER";

34. Write the output of the queries (i) to (iv) based on the table FURNITURE given below.

Table : FURNITURE				
FID	NAME	DATE OF PURCHASE	COST	DISCOUNT
B001	Double Bed	03-JAN-2018	45000	10
T010	Dinning Table	10-MAR-2020	51000	5
B004	Single Bed	19-JUL-2021	22000	0
C003	Long back Chair	30-DEC-2016	12000	3

| T006 | Console Table | 17-NOV-2019 | 15000 | 12 |
| B006 | Bunk bed | 01-JAN-2021 | 28000 | 14 |

(i)   `SELECT SUM(DISCOUNT) FROM FURNITURE WHERE COST>15000;`

(ii) `SELECT MAX(DATEOFPURCHASE) FROM FURNITURE;`

(iii) `SELECT * FROM FURNITURE WHERE DISCOUNT>5 AND FID LIKE "T%";`

(iv) `SELECT DATEOFPURCHASE FROM FURNITURE WHERE NAME IN ("Dinning Table", "Console Table");`

35. Sony corporation has set up its 4 offices in the city of Srinagar, with its offices X, Z, Y, U:

```
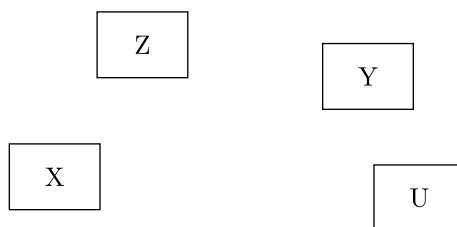        Z              Y

    X              U
```

Branch to Branch distance is given below:

X to Z	40 m
Z to Y	60 m
Y to X	135 m
X to U	70 m
Z to U	165 m
Z to U	80 m

Number of computers in each of the offices is as follows:

X	50
Z	130
Y	40
U	15

(i)   Suggest a suitable cable layout of connectivity of the offices.

(ii) Suggest placement of server in the network with suitable reason.

(iii) Suggest placement of following devices in the network:

    (a) Switch/Hub

    (b) Repeater

(iv) Suggest a suitable topology for connecting the computers in each building.

SECTION - E

36. Consider the table APPLICANTS

TABLE: APPLICANTS					
No	NAME	FEE	GEN-DER	C_ID	JOINYEAR

1012	Amandeep	30000	M	A01	2012
1102	Avisha	25000	F	A02	2009
1103	Ekant	30000	M	A02	2011
1049	Arun	30000	M	A03	2009
1025	Amber	40000	M	A02	2011
1106	Ela	40000	F	A05	2010
1017	Nikita	35000	F	A03	2012
1108	Arluna	30000	F	A03	2012
2109	Shakti	35000	M	A04	2011
1101	Kirat	25000	M	A01	2012

(i)   Which field qualifies to be the Primary key.

(ii) If all the records of Male applicants are deleted, what will be the cardinality of the table.

(iii) Write statements to

   (a) Increase FEE of "M" (Male) applicatnts by 2000.

   (b) Display details of "F" (Female) applicants in descending order of FEE.

or

(Option for part (iii) only)

Write statements to

(a) Change width of column FEE to 20.

(b) Remove the column C_ID.

37. (a) Carefully observe the following Python code and answer the question that follow:

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

On execution the above code, produces the following output:

   6   3

Explain the output with respect to the scope of the variables.

(b) Write the code to create a table Product in database Inventory with following fields

Fields	Datatype
PID	varchar(5)
PName	char(30)
Price	float
Rank	varchar(2)

Note the following to establish the connection between Python and MySQL:

Host : localhost
Username : system
Password : hello
Database : Inventory

Sample Paper 03

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False
    "Lists and dictionaries are mutable."

2. What is the default value of the host parameter?
    (a) host   (b) localhost
    (c) globalhost   (d) None of these

3. Observe the following tuples and choose the correct option
    ```
    t1=(4, 7, 8, 9)
    t2=(0, 4, 3)
        >>>t=t1+t2
        >>>print(t)
    ```
    (a) (4, 7, 8, 9, 0, 4, 3)   (b) (4, 7, 8, 9, 4, 7, 8, 9)
    (b) (4, 7, 8, 9)   (d) None of these

4. Which of the following SQL commands displays the structure of a table?
    (a) ALTER   (b) STRUCTURE
    (c) DESCRIBE   (d) SHOW DATA

5. Which of the following is the correct output for the execution of the following Python statement?

```
print(5+3**2/2)
```

(a) 32   (b) 8.0

(c) 9.5   (d) 32.0

6. Which type of path does not begin with a leading forward slash?

(a) Relative   (b) Absolute

(c) Both (a) and (b)   (d) None of these

7. What will be the output of the following code snippet?

```
text = "Artificial Intelligence"
print(text[3:15:4])
```

8. Which command is used to add a primary key to a table after it has already been created?

(a) MODIFY   (b) ADD PRIMARY

(c) ALTER   (d) ADD KEY

9. Which clause is used to retrieve unique values from a field in a table?

(a) MAX   (b) UNIQUE

(c) DISTINCT   (d) None of these

10. Fill in the blank to complete the following code:

file = open("data.txt", "w")

file.write("Learning file handling in Python.")

file.close()

11. State whether the following statement is True or False:

If there is no `except` block to handle an exception, Python will raise an error and stop execution.

12. _____is an attribute that makes a link between two tables to fetch corresponding data.

(a) Primary key   (b) Secondary key

(c) Foreign key   (d) Composite key

13. Assume that the position of the file pointer is at the beginning of 3rd line in a text file. Which of the following option can be used to read all the remaining lines?

(a) myfile.read(n-3)   (b) myfile.read(n)

(c) myfile.readline( )   (d) myfile.readlines( )

14. Which protocol is used for uploading and downloading files over a network?

(a) SMTP   (b) FTP

(c) PPP   (d) VoIP

15.
```
sub = "PYTHON"
for i in sub:
    print (i, ' ', end = " ")
```

(a) PYTHON

(b) P
     Y
     T
     H
     O
     N

(c) None

(d) P, Y, T, H, O, N

16. In complex number a + ib, b represents as

(a) real part

(b) imaginary part

(c) special part

(d) None of these

17. Given an object obj1 = (15, 25, 35, 45, 55, 65, 75, 85, 95), what will be the output of print(obj1[3:7:2])?

(a) (45,55,65,75,85)

(b) (45,55,65,75)

(c) (45,55,65)

(d) (45,65)

18. Which of the following function returns the total number of values?

(a) MAX

(b) MIN

(c) COUNT

(d) SUM

19. Which of the following is the correct output for the following execution ?
```
print(print("Biscope"))
```
(a) Biscope None

(b) None

(c) Biscope

(d) Error

Directions : (Q. Nos. 20 and 21) are Assertion and Reason based questions.

20. **Assertion (A) :** A Python function that accepts parameters can be called without any parameters.

Reason (R) : Functions can carry default values that are used, whenever values are not received from calling function.

(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 CSV file is by default delimited by comma(,), but the delimiter character can be changed.

Reason (R) : The writerow() function for CSV files has a "delimiter" parameter that can be used to specify the delimiter to be used for a CSV file.

CLICK HERE TO SEE ANSWERS

(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. What is the output of the following Python statement?
```
L = [10, 20, 30, 40, 50]
L = L + 5
print(L)
```

23. (a) What will be the output of the following Python code?
```
L =[10, 20]
L1=[30, 40]
L2=[50, 60]
L. append (L1)
L.extend(L2)
print(L)
```
(b) Find the output
```
>>> l1 = [1,2,3,4]
>>> l2 = [1,2,3,4]
>>> l1 > l2
```

24. Write any two disadvantages of star topology.

or

Why is a switch called an intelligent hub?

25. Mention the various advantages of using a DBMS.

26. (a) Write the full forms of the following

　　(i) WAN

　　(ii) GSM

(b) Write down the expansion of Modem. Also, write its role in a network.

27. What is the output of the following code?
```
x = (1, 2, 3)
y = (3, 4)
t = x + y
print(t)
```

or

Observe the following tuple and answer the questions that follow:
```
t1 = (70, 56, 'Hello', 22, 2, 'Hi', 'The', 'World', 3)
```
(i) t1[2 : 4]　　　　　(ii) t1[- 6]

28. If relation R1 has 8 rows and 5 columns, what is its cardinality?

If 5 more rows are added, what will be the degree of the table?

<div align="center">**or**</div>

Identify commands/functions for the following actions

(i) To display only records of Trains from the Train table whose starting station is "NDLS". (Column for starting station is "Start", table name is "Train")

(ii) To get the average of percentage of students (Table name : "Student" , Percentage column : "Perc").

SECTION - C

29. Write a Python program that read the data from file 'original.dat' and delete the line(s) having word (passed as an argument). Then write these data after removing lines into file 'duplicate.dat'.

<div align="center">**or**</div>

Write a program in Python to open a text file "lines.txt" and display all those words whose length is greater than 5.

30. Consider the following stack of characters, where STACK is allocated N = 8 memory cells.

STACK : A, C, D, F, K,...,...,...

Describe the STACK at the end of the following operations. Here, Pop and Push are algorithms for deleting and adding an element to the stack.

(i) Pop (STACK, ITEM)

(ii) Pop (STACK, ITEM)

(iii) Push (STACK, L)

(iv) Push (STACK, P)

(v) Pop (STACK, ITEM)

(vi) Push (STACK, R)

<div align="center">**or**</div>

Consider the following sequence of numbers:

       1, 2, 3, 4

These are supposed to be operated through a stack to produce the following sequence of numbers:

       2, 1, 4, 3

List the Push and Pop operations to get the required output.

31. Given below is a table Item in database Inventory.

Item ID	Item Name	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.

Note the following to establish the connection between Python and MySQL:

Host : localhost

Username : system

Password : test

Database : Inventory

or

Consider the following table structure

Table: Faculty

```
F_ID(P)
Fname
Lname
Hire_date
Salary
```

Write the Python code to create the above table.

Consider :

host : localhost
UserName : root
Password : system
Database :School

SECTION - D

32. What do you mean by file? What do you mean by file handling?

Write a program code in python to perform the following using two functions as follows :

(a) addBook( ) : to write to a csv file "book.csv" file book no, book name and no of pages with separator as tab.

(b) countRecords( ) : To count and display the total number of records in the "book.csv" file

or

Explain open( ) function with its syntax.

Write python code to perform the following using two user defined functions.

(a) showData() : To display only roll no and student name of the file "student.csv"

RollNo,	Name,	Marks
1,	Nilesh,	65
2,	Akshay,	75

(b) showSelect( ) : To display only roll number and marks of the students from the csv file "student.csv"

33. (a) Consider the tables CITY and LOCATION given below.

Table : CITY		
Field Name	**Data Type**	**Remarks**
CITYCODE	CHAR(5)	Primary Key
CITYNAME	CHAR(30)	
SIZE	INTEGER	
AVGTEMP	INTEGER	
POPULATIONRATE	INTEGER	
POPULATION	INTEGER	

Table: Location

Citycode	Lname
C1	East
C2	West
C3	South
C4	North

Write a command to display the Cityname and corresponding Location name (Lname), where the average temperature is greater than 35 from the tables.

(b) Write outputs for the SQL commands (i) to (iv) based on the table CUSTOMER given below:

TABLE: CUSTOMER				
CID	CNAME	GENDER	SID	AREA
1001	R SHARMA	FEMALE	101	NORTH
1002	M R TIWARY	MALE	102	SOUTH
1003	M K KHAN	MALE	103	EAST
1004	A K SINGH	MALE	102	EAST
1005	S SEN	FEMALE	101	WEST
1006	R DUBEY	MALE	104	NORTH
1007	M AGARWAL	FEMALE	104	NORTH
1008	S DAS	FEMALE	103	SOUTH
1009	R K PATIL	MALE	102	NORTH
1010	N KRISHNA MURTY	MALE	102	SOUTH

   (i) `SELECT COUNT(*), GENDER FROM CUSTOMER GROUP BY GENDER;`

   (ii) `SELECT CNAME FROM CUSTOMER WHERE CNAME LIKE 'L%';`

   (iii) `SELECT DISTINCT AREA FROM CUSTOMER;`

   (iv) `SE.LECT'COUNT(*) FROM CUSTOMER WHERE GENDER="MALE";`

34. Answer the questions (i) to (iv) on the basis of the following tables SHOPPE and ACCESSORIES.

TABLE: SHOPPE		
Id	S Name	Area
S001	ABC Computeronics	CP
S002	All Infotech Media	GK II
S003	Tech Shoppe	CP
S004	Geeks Tecno Soft	Nehru Place
S005	Hitech Tech Store	Nehru Place

TABLE: ACCESSORIES			
No	Name	Price	Id
A01	Mother Board	12000	S01
A02	Hard Disk	5000	S01

CLICK HERE TO SEE ANSWERS

A03	Keyboard	500	S02
A04	Mouse	300	S01
A05	Mother Board	13000	S02
A06	Keyboard	400	S03
A07	LCD	6000	S04
T08	LCD	5500	S05
T09	Mouse	350	S05
T10	Hard Disk	4500	S03

(i) To display Name and Price of all the ACCESSORIES in ascending order of their Price.

(ii) To display Id and SName of all SHOPPE located in Nehru Place.

(iii) To display Minimum and Maximum Price of each Name of ACCESSORIES.

(iv) To display Name, Price of all ACCESSORIES and their respective SName, where they are available.

35. Write a userdefined function parser(L) that accepts a list as parameter and creates another two lists storing the numbers from the original list , that are even and numbers that are odd.

SECTION-E

36. Consider the following table STORE and answer the questions:

TABLE: STORE					
ItemNo	**Item**	**Scode**	**Qty**	**Rate**	**LastBuy**
2005	Sharpener Classic	23	60	8	31-JUN-09
2003	Balls	22	50	25	01-FEB-10
2002	Gel Pen Premium	21	150	12	24-FEB-10
2006	Gel Pen Classic	21	250	20	11-MAR-09
2001	Eraser Small	22	220	6	19-JAN-09
2004	Eraser Big	22	110	8	02-DEC-09
2009	Ball Pen 0.5	21	180	18	03-NOV-09

(i) What is the degree of the table?

(ii) Write the syntax of the SQL command to change data of the table.

(iii) Write statements to :

    (a) Display the number of distinct Scodes.

    (b) Display the maximum and minimum quantities.

    (Option for part (iii) only)

    Write statements to :

    (a) Display the structure of the STORE table.

    (b) Add a new column Location varchar(50) in the table to store the location details of the items.

37. Trine Tech Corporation (TTC) is a professional consultancy company. The company is planning to set up their new offices in India with its hub at Hyderabad. As a network adviser, you have to understand their requirement and suggest them the best available solutions. Their queries are mentioned as (i) to (v) below.

Physical locations of the blocks of TTC
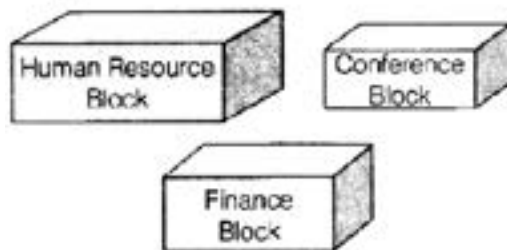
Block to block distance (in m)

Block (From)	Block (To)	Distance
Human Resource	Conference	110
Human Resource	Finance	40
Conference	Finance	80

Expected number of computers to be in each block

Block	Computers
Human Resource	25
Finance	120
Conference	90

(i) Which will be the most appropriate block, where TTC should plan to install their server?

(ii) Draw a block to block cable layout to connect all the buildings in the most appropriate manner for efficient communication.

(iii) Suggest a suitable topology to connect the computers in each building.

(iv) Which of the following device will be suggested by you to connect each computer in each of the buildings?

    (a) Switch/Hub

    (b) Modem

    (c) Gateway

(v) Company is planning to connect its offices in Hyderabad which is less than 1 km. Which type of network will be formed?

END

CLICK HERE TO SEE ANSWERS

Sample Paper 04

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False
   "The method that can be used to delete a range of values from a list is del".

2. Given L= [2,3,4,5,6]. The output of print(L[–1:–5]) is
   (a) [6,5,4]   (b) Error
   (c) [ ]   (d) [6,5]

3. What are the rows of a relation called?
   (a) relation   (b) tuples
   (c) data structure   (d) an entity

4. If a table carries 10 columns and 15 rows, what is its degree?
   (a) 10   (b) 150
   (c) 15   (d) 25

5. Which function returns True if all characters in a string are digits?
   (a) isalnum()   (b) isdigit()
   (c) isnumber()   (d) isalpha()

6. What will be the output of the following code snippet?
```
message = "Computer Science"
print(message[:8:-2])
```

7. The seek(n) places the file pointer at position n with reference to
(a) Beginning   (b) End
(c) Current position   (d) Position 10

8. For the tuple t = (2, 5, 1, 6, 3), what will be the result of executing t.sort()?
(a) (1,2,3,5,6)   (b) (6,5,3,2,1)
(c) Error   (d) None of these

9.
```
t1=(9,6,7,6)
t2=(2.8,12,20)
```
The output of the statement below is
```
print( min(t1) + max(t2))
```
(a) 26   (b) 25
(c) Error   (d) None of these

10. Identify the missing code to complete this snippet:
file = open("myfile.txt", "a")

file.write("Appending new content")

file.seek(0)

print(file.read())

file.close()

11. State whether the following statement is True or False:
The `try` block in Python can exist without an accompanying `except` block.

12. The ceil() function is part of which module?
(a) pandas   (b) pyplot
(c) random   (d) math

13. Which command is used to view a list of all databases in the system?
(a) Show   (b) Show databases
(c) Display databases   (d) View databases

14. Which among the following are constraints ?
(a) Primary key   (b) Unique
(c) NOT NULL   (d) All of these

15. in and not in are........Operators.

    (a) Arithmetic   (b) Membership

    (c) Logical   (d) Identity

16. Modulation and demodulation are performed by which device?

    (a) microwave   (b) satellite

    (c) modem   (d) gateway

17. A set of possible data values is called

    (a) attribute   (b) degree

    (c) tuple   (d) domain

18. The..........attribute of the connection string specifies the password to connect to the database.

    (a) code   (b) password

    (c) passwd   (d) All of these

19. Which character must be added to the mode when opening a binary file?

    (a) b   (b) x

    (c) u   (d) b*

Directions (Q.Nos. 20-21) are Assertion and Reason based questions.

20. Assertion (A) : A function with 3 formal parameters must be called with 3 actual parameters.

    Reason (R) : Since, all the formal parameters are used to produce the output from the function , the function expects the same number of parameters from the function call.

    (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 binary file uses the dump() function to write data into it.

    Reason (R) : The load() function reads data from a binary 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.

SECTION B

22. What will be the output of following code ?
```
L = [15, 25, 45, 55]
L.append(65)
L.insert(2, 35)
L.sort()
print(L)
```

23. Find outputs of following code.
(a)
```
L = [200, 25, [15, 35, 55], 150]
L1 = [14, 25, 27]
L.extend(L1)
print(L[2][1])
print(L)
```
(b)
```
t1 = (8, 5, 3, 15)
t2 = (20, 14, 18)
print(t1 + t2)
print(t1 * 3)
print(t2 - t1)
```

24. List two advantages and two disadvantages of bus topology.

or

Which part of TCP/IP is responsible for dividing a file or message into very small parts, at the source computer? Also, define, TCP/IP.

25. Explain the concept of a primary key, and provide an example of a primary key from a table with meaningful data.

26. (a) Write the full forms of
    (i) LAN
    (ii) XML
(b) What was the role of ARPANET in the computer network?

27. What will be the output of the following code, when executed?
```
d = {'Name': 'Sita', 'Subjects': ['Math', 'Biology', 'History'], 'Marks': [85, 92, 76]}
print(d['Subjects'])
print(d['Subjects'][1])
```

or

What will be the output of the following code, when executed?
```
tupnames=("India", "Australia",
    ("UK", "Nepal"), "Bangladesh")
```

```
print(tupnames[5 : ])
print(tupnames[2][1])
```

28. List the major components of a database system.

or

What is a join? What are the different types of joins?

SECTION C

29. Suppose a STACK is allocated 6 memory locations and starts as empty (Top = 0). Provide the output of the following program segment:

```
AAA = 5
BBB = 8
Push(STACK, AAA)
Push(STACK, 3)
Push(STACK, BBB + 1)
Push(STACK, AAA + BBB)
Push(STACK, 12)
while (Top > 0):
    Element = STACK.Pop()
    print(Element)
```

or

Consider the following operations are done on a stack. What will be the final status of the stack after all the operations are performed.

(a) Push(True)

(b) Push(False)

(c) Push(10)

(d) Pop()

(e) Push(50)

(f) Push(70)

(g) Pop()

(h) Pop()

30. Write a program to accept a filename and a position. Using the inputs, call a function SearchFile(Fname, pos) to read the contents of the file from the position to the end. Now, display all those words that start with "U" or "u".

or

Write a program to search a Employee record according to Id from the "emp.txt" file. The "emp.txt" file contains Id, Name and Salary fields. Assume that first field of the employee records (between Id and Name) is separated with a comma(,).

31. The code given below opens a binary file and writes records of customer's roomid, Name and days of stay . Some of the codes are missing .Write codes to fill up the blanks :

```
import.......      # Blank1
hotellst=[]
cname=" "
days=0.0
roomid=0
ans='y'
f=open("hotel.dat", "wb")
print("Welcome to my Hotel ")
while ans== 'y':
   roomid=input("Enter Roomld :")
   cname=input("Enter Customer name
                                :")
   days=float(input("Enter days of
                          stay :"))
   hotellst=[...., ....., .....]
   # Blank2 To create the record to
   be written .........# Blank3 To
   write the data to the binary file.
   ans=input("Continue(y/n)")
f.close()
```

(i) Write the missing code for Blank1.

(ii) Write the missing code for Blank2.

(iii) Write the missing code for Blank3.

or

Write a user defined function change(L) to accept a list of numbers and replace the number in the list with its factorial.

Example :

Input : [3,4,5,6,7]

Output: [6, 24, 120, 720, 5040]

SECTION D

32. (a) The code given below will give an error on execution. Identify the type of the error and modify the code to handle such type of an error.

```
x = int(input("Enter the value of
                      x : "))
y = int(input("Enter the value of
                      y : "))
z = x/y
print ("The value of z : ", z)
```

(b) Note the following to establish the connection between Python and MySQL:

A resultset is extracted from the database using the cursor object (that has been already created) by giving the following statement.

```
Mydata=cursor.fetchone( )
```

(i) How many records will be returned by fetchone() method?

(ii) What will be the datatype of Mydata object after the given command is executed?

or

(a) Predict the output :

```
str = "Python Program"
def sTringoutput(str):
    print(str[3:5])
    print(str[-10])
    print(str[5:])
    print(str[-28])
```

(b) Define fetchmany([size]). How does fetchone() method differ from fetchall() method?

33. (a) Consider the tables Student and House given below. What will be the output of the statement given?

Table: Student			
Rno	**Sname**	**Class**	**Hcode**
1	Raj	12ScA	C1
2	Shekhar	11ComC	C2
3	Ravi	12HumB	C2
4	Jaisnav	12ScB	C3

Table: House	
H code	**L name**
C1	East
C2	West
C3	South
C4	North

```
SELECT S.Sname , H.Lname FROM Student S, House H WHERE S.Hcode = H.Hcode AND
SName LIKE "R%";
```

(b) Consider the following table STORE and answer the questions

TABLE: STORE					
Item No	**Item**	**S code**	**Qty**	**Rate**	**Last Buy**
2005	Sharpener Classic	23	60	8	31-JUN-09
2003	Balls	22	50	25	01-FEB-10
2002	Gel Pen Premium	21	150	12	24-FEB-10
2006	Gel Pen Classic	21	250	20	11-MAR-09
2001	Eraser Small	22	220	6	19-JAN-09
2004	Eraser Big	22	110	8	02-DEC-09
2009	Ball Pen 0.5	21	180	18	03-NOV-09

Write SQL commands for the following statements:

(i) To display details of all the items in the STORE table in ascending order of LastBuy.

(ii) To display ItemNo and Item name of those items from STORE table, whose Rate is more than ₹15.

(iii) To display the details of those items whose Supplier code (Scode) is 22 or Quantity in Store (Qty) is more than 110 from the table STORE.

34. Granuda consultants are setting up a secured network for their office campus at Faridabad for their day-to-day office and web based activities. They are planning to have connectivity between 3 buildings and the head office situated in Kolkata.

Answer the questions (i) to (v) after going through the building positions in the campus and other details, which are given below:

Distance between various buildings

Building RAVI to Building JAMUNA	120 m
Building RAVI to Building GANGA	50 m
Building GANGA to Building JAMUNA	65 m
Faridabad Campus to Head Office	1460 km

Number of computers

Building RAVI	25
Building JAMUNA	150
Building GANGA	51
Head Office	10

(i) Suggest the most suitable place (i.e. block) to house the server of this organisation. Also, give a reason to justify your suggested location.

(ii) Suggest a cable layout of connections between the building inside the campus.

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

    (a) Switch

    (b) Repeater

(iv) The organisation is planning to provide a high speed link with its head office situated in the Kolkata using a wired connection. Which of the following cable will be most suitable for this job?

    (a) Optical fibre

    (b) Co-axial cable

    (c) Ethernet cable

<p align="center">or</p>

(v) Consultancy is planning to connect its office in Faridabad which is more than 10 km from Head office. Which type of network will be formed?

35. Consider the following tables GARMENT and FABRIC. Write SQL commands for the statements (i) to (iv).

TABLE: GARMENT				
GCODE	**DESCRIPTION**	**PRICE**	**FCODE**	**READY-DATE**
10023	PENCIL SKIRT	1150	F03	19-DEC-08
10001	FORMAL SHIRT	1250	F01	12-JAN-08
10012	INFORMAL SHIRT	1550	F02	06-JUN-08
10024	BABY TOP	750	F03	07-APR-07
10090	TULIP SKIRT	850	F02	31-MAR-07
10019	EVENING GOWN	850	F03	06-JUN-08
10009	INFORMAL PANT	1500	F02	20-OCT-08

10007	FORMAL PANT	1350	F01	09-MAR-08
10020	FROCK	850	F04	09-SEP-07
10089	SLACKS	750	F03	20-OCT-08

TABLE: FABRIC	
FCODE	**TYPE**
F04	POLYSTER
F02	COTTON
F03	SILK
F01	TERELENE

(i) To display GCODE and DESCRIPTION of each GARMENT in descending order of GCODE.

(ii) To display the details of all the GARMENTs, which have READYDATE in between 08-DEC-07 and 16-JUN-08 (inclusive of both the dates).

(iii) To display the average PRICE of all the GARMENTs. Which are made up of FABRIC with FCODE as F03.

(iv) To display FABRIC wise highest and lowest price of GARMENTs from GARMENT table. (Display FCODE of each GARMENT along with highest and lowest price.)

SECTION E

36. What are the advantages of CSV files?

Write a Python program that includes the following functions to work with a file named "teacher.csv," which contains columns for city, teacher name, and salary amount.

(a) Search() : Search and print all rows where city is "delhi".

Sample "teacher.csv" :

City	Teacher Name	Salamount
Delhi,	Anil Sharma,	10000
Pune,	Mr Dua,	20000
Delhi,	Mr Das,	25000

(b) Searchfromfile() : From the file "teacher.csv" print all rows where teacher name is "Anil".

or

What are the Disadvantages of CSV files?

Write a program using functions :

(a) addTransaction() : To append bank transactions of following structure to "bank.csv"

TranlD　　　TranDate　　　Amount　　　Type

(b) getTran() : To display those transactions whose type is "Deposit".

37. Consider the following "Student" table:

Table : Student				
Adm No	**Roll No**	**Name**	**Class**	**Marks**
2715	1	Ram	12	90
2816	2	Shyam	11	95
2404	3	Ajay	10	92
2917	4	Tarun	12	94

(i)   Can the "Class" column be used as the primary key of the table?

(ii) What is the cardinality of the table?

(iii) Write statements to :

    (a) Display the average Marks .

    (b) Display the different Classes .

<div align="center">

or

(Option for part (iii) only)

</div>

Write statements to :

(a) Change the data type of Marks column so that it can take fractional values upto 2 decimals .

(b) Increase width of Name column to varchar(50).

<div align="center">

END

</div>

Sample Paper 05

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False

    Digits are one of the parts of the Python character set

2. Which command is used to modify or change existing records in a table?

    (a) UPDATE   (b) CHANGE

    (c) ALTER   (d) MODIFY

3. Which of the following operator cannot be used with string data type?

    (a) +   (b) in

    (c) *   (d) /

4. Which of the following is a category of SQL commands?

    (a) DDL   (b) TCL

    (c) DML   (d) All of these

5. What is the output of the following code?

    ```
    num = 5 + float(9) / int(3.0)
    print("num =", num)
    ```

    (a) num = 8.0   (b) 7.5

    (c) num : 6.5   (d) Error

CLICK HERE TO SEE ANSWERS

6. What will be the output of the following code snippet?

text = "Data Structures"

print(text[5:15:3])

7. Given : s= "ComputerExam". What will be the output of

```
print(s[2]+s[8]+s[1:5]?
```

(a) mEOMUU   (b) mEompu

(c) mEomPU   (d) MEompu

8. The clause to arrange the data of a column in descending order is

(a) DESC   (b) GROUP BY

(c) LIKE   (d) ASC

9. Which of the following is the most common type of constant?

(a) Keywords   (b) Literals

(c) Variables   (d) Identifiers

10. Complete the following code snippet with the appropriate statement:

file = open("report.txt", "r")

content = file.read(50)

file.seek(-10, 1)

remaining_content = file.read()

file.close()

11. State whether the following statement is True or False:

The `finally` block in Python executes whether or not an exception occurs in the `try` block.

12. Which of the following types of files will need the pickle module for working on it ?

(a) Binary files   (b) Text files

(c) CSV files   (d) All of these

13. In the following code, which lines will give error? (Assume the lines are numbered starting from 1.)

```
mul=3
value=10
for i in range (1, 6, 1):
    if (value % mul = 0):
        print (value * multiply)
    else
        print (value + multiply)
```

(a) 4,5   (b) 4,5,6

(c) 4,5,6,7   (d) No errors

14. A relation can contain _ _ _ _ foreign keys.

(a) 2   (b) 3

(c) 1   (d) Multiple

15. The_ _ _ _ _clause with the COUNT() function counts only the unique values in an attribute.

(a) UNIQUE   (b) HAVING

(c) DISTINCT   (d) LIKE

16. Python scripts can be written to connect with MySQL using which of the following libraries?

(a) MySQL.connector library   (b) SQL.connect library

(c) MySQL.connect library   (d) None of these

17. Which protocol is used for remote login?

(a) HTIT   (b) PPP

(c) IRCP   (d) Telnet

18. Which of the following functions will read lines of a text file as list elements.

(a) read( )   (b) get()

(c) readline( )   (d) readlines( )

19. Which of the following will be the output of the statement given below?
```
print([12,34,56,78,90].pop())
```
(a) 78   (b) 90

(c) 12   (d) 12,34,56,78,90

Direction (Q.Nos. 20-21) are Assertion and Reason based questions.

20. Assertion (A) : In a cross join the number of records in the output will be the maximum.
Reason (R) : A cross join is also called a Cartesian product.

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

(d) A is false but R is true.

21. Assertion (A) : A file that is opened using the open() function may not specify the mode of opening it.
Reason (R) : If the mode is not specified , the read mode is used by default..

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

(d) A is false but R is true.

CLICK HERE TO SEE ANSWERS

SECTION B

22. Observe the given list and find the answer of questions that follows.

```
list1 = [23, 45, 63, 'Hello', 20
              'World', 15, 18]
```
(i) `list1[-3]`   (ii) `list1[3]`

23. (a) Find the output

```
L = [15, 28, 55, 88, 15, 33, 5]
```
(i) `L[2:6]`   (ii) `L[::-3]`

(b) Find the error(s).

```
L1 = [7, 2, 3, 4]
L2 = L1 + 2
L3 = L1 * 2
L = L1.pop(7)
```

24. What is the advantage of using switch over hub?

or

Write some benefits of networking.

25. What do you understand by RDMS?

26. (a) Write the full forms of :

(i) POP

(ii) HTTP

(b) Differentiate between the terms Internet and Intranet.

27. What will be the output of the following code?

```
dic = {'a':1, 'b':2, 'c':3, 'd':4}
print(dic)
if 'a' in dic :
    del dic['a']
print(dic)
```

or

Distinguish between tuple and list.

28. Describe the concept of candidate keys and provide a suitable example to illustrate.

or

Observe the following table carefully and write the names of the most appropriate columns, which can be considered as (i) candidate keys and (ii) primary key.

Table: Product				
CID	**CNAME**	**AMOUNT**	**COUNTRY**	**ITEM**
101	ALLE	100000	JMEKA	SHOES

111	BEN	20000	FRANCE	
110	RIKI	25000	AMERICA	BAG
011	BRETT LEE	105000	AUSTRALIA	BAT

SECTION C

29. Write Push(contents) and Pop() methods in Python to add and remove numbers, simulating stack operations.

or

Find the final contents of a stack on which the following operations are done.
1. Push(100)
2. Push(200)
3. Push(50)
4. Push(50)
5. Pop()
6. Push()
7. Pop(2)
8. Pop()

30. The binary file "emp.dat" contains employee records with the following structure:

Eno   Ename   Salary

1   Mr. Raj   85000

⋮

Write a Python program to open "emp.dat" and display only the records where the employee's salary exceeds 75000.

or

Write a program to read the content from a text file "status.txt", count and display the total number of lines and blank spaces present in it. e.g. if the "status.txt" file contains the following lines:
Welcome to your one-step solutions for all your study, practice and assessment needs for various competitive & recruitment examinations and school segment. We have been working tirelessly for over a decade to make sure that you have best in class study resources because you deserve SUCCESS AND NOTHING LESS...
The output will be:
The status file contents are
Total lines in file are: 4
Total spaces in file are: 43

31. The code given below reads a text file and displays those words that begin with an uppercase vowel and end with a lowercase vowel . Some of the codes are missing .Write codes to fill up the blanks.

```
f=open("emp.txt")
filedata=f.read()
count=0
print(filedata)
data=filedata.split(' ')
for.......... in data : #Blank1
    if words[-1] in "aeiou" and ...in "AEIOU": # Blank2
    print(......... .)         # Blank3
f.close()
```

CLICK HERE TO SEE ANSWERS

(i) Write the missing code for Blank1.

(ii) Write the missing code for Blank2.

(iii) Write the missing code for Blank3.

or

Write a user defined function change(L) to accept a list of numbers and replace the numbers in the list with their sum of digits.

Example

Input : [32,142,215,26,7]

Output : [5, 7 , 8 , 8, 8,7]

SECTION D

32. (a) Underline the syntax errors in the following program

```
x = int(input("Enter first number:))
y = int(input("Enter second number:"))
z = int(input("Enter third number:")
a = x+ b+ z
print ("Result = ", b)
```

(b) Write the code to create the following table Student with the following fields

RollNo

FirstName

LastName

Address

ContactNo

Marks

Course

Rank

In the table, Rank should be Good, Best, Bad, Worst, Average.

or

(a) Differentiate between a logical error and syntax error. Also, give suitable examples of each in Python.

(b) What is the use of fetchone() method? Write an example code to fetch a single record from a database.

Note :

Database : PythonDB

Table : Student

Host : localhost

UsedlD : root

Password : arihant

33. Which module is used to operate on CSV file?

Write a python program with following functions :

(a) addcsv():

File old.csv has come from branch in Pune and it needs to be added to file "updated.csv" which has data for all branches. Write the code in the function to perform the same.

(b) convertcsv() :

A file old.csv has come with separator ':' but your system can only read ';' Write a program to convert to "converted.csv" file. Write the function to change the separator of the file.

34. (a) Consider the tables Travel and Train given below.

Table : Travel

Tcno	Pname	Class	TId	Amt
1	Rahul	AC	T1	2500
2	Sujit	SL	T2	4500
3	Ravi	AC	T1	6000
4	Ankita	AC	T3	1800

Table : Train

TId	Tname
T1	Rajdhani
T2	Himgiri Exp
T3	Darjeeling Mail

Write the command to display the passenger names and the train names by which they are travelling for all passengers travelling by "Mail" trains.

(b) Considering the tables Train and Travel given above write commands for the following :

(i) Display passenger names , corresponding train names and amounts for records where amount >5000.

(ii) Increase amount of passengers by 20% who are travelling by 'AC"

(iii) Display a cross join of the two tables.

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

(iv) Remove records of passengers who are travelling by "Rajdhani".

35. Consider the following tables SENDER and RECIPINT. Write SQL commands for the statements (i) to (iv).

TABLE: SENDER			
SenderID	**SenderName**	**SenderAddress**	**SenderCity**
ND01	R Jain	2, ABC Appts	New Delhi
MU02	H Sinha	12, Newtown	Mumbai
MU15	S Jha	27/A, Park Street	Mumbai
ND50	T Prasad	122-K, SDA	New Delhi

TABLE: RECIPIENT				
Rec ID	Sender lD	Rec Name	Rec Address	Rec City
KO05	ND01	R Bajpayee	5, Central Avenue	Kolkata
ND08	MU02	S Mahajan	116, A Vihar	New Delhi
MU19	ND01	H Singh	2A, Andheri East	Mumbai
MU32	MU15	P K Swamy	B5, C S Terminus	Mumbai
ND48	ND50	S Tripathi	13, B1 D, Mayur Vihar	New Delhi

(i)   To display the names of all Senders from Mumbai.

(ii) To display the RecID, SenderName, SenderAddress, RecName, RecAddress for every Recipient.

(iii) To display Recipient details in ascending order of RecName.

(iv) To display number of Recipients from each City.

SECTION E

36. Freshminds University of India is launching its first campus in Ana Nagar, South India, with a central admissions office in Kolkata. The campus spans 5 km and consists of three main blocks: Office, Science, and Commerce.

As a network expert, propose a network plan addressing points (i) to (v), considering the given distances and parameters.
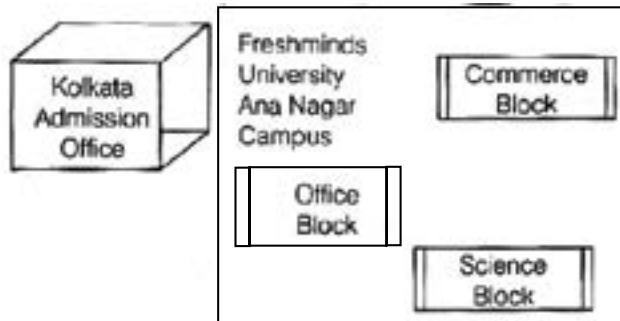
Expected wire distance between various locations.

Office Block to Science Block	90 m
Office Block to Commerce Block	80 m
Science Block to Commerce Block	15 m
Kolkata Admission Office to Ana Nagar Campus	450 km

Expected number of computers to be installed at various locations in the university are as follows:

Office Block	10
Science Block	140
Commerce Block	30
Kolkata Admission Office	8

(i)   Suggest the authorities, the cable layout amongst various blocks inside university campus for connecting the blocks.

(ii) Suggest the most suitable place (i.e. block) to house the server for this university with a suitable reason.

(iii) Suggest an efficient device from the following to be installed in each of the block to connect all the computers.

(a) Modem

(b) Switch

(c) Gateway

(iv) Suggest a suitable topology to connect the computers in each building.

(v) University is planning to connect its campus in Kolkata which is more than 100 km. Which type of network will be formed?

37. Consider the following table Person

P_Id	LastName	First Name	Address	City
1	Hansen	Ola	Timoteivn 10	Sandnes
2	Svendson	Tove	Borgvn 23	Sandnes
3	Pettersen	Kari	Storgt 20	Stavanger
4	Nilsen	Johan	Bakken 2	Stavanger

(i) What should be the constraint(s) of the P_Id column?

(ii) If 3 columns are added to the table , what will be its degree?

(iii) Write statements to :

(a) Display the Unique Cities.

(b) Display Firstnames of people who do not have a address.

or (Option for part (iii) only)

Write appropriate data types to store the following :

(a) Amounts carrying values with decimal.

(b) Joining dates.

END

Sample Paper 06

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False

   "The pop() method removes and displays the last element of a list."

2. What will be the output of the following code?
   ```
   L = [6, 7, 8, 9, 10]
   print(L[2:20])
   ```
   (a) [8, 9, 10]   (b) [ ]

   (c) Error   (d) [6,7,8,9,10]

3. The random function returns a random value between

   (a) 1 and 10   (b) 0 and 10

   (c) 0 and 1   (d) 1 and 100

4. To read three characters from a file object f, we use..........

   (a) f.read(3)   (b) f.read()

   (c) f.readline()   (d) f.readlines()

5. What will be the output of the following code snippet?

   string = "Information"

   print(string[-1:-10:-3])

6. ....are drawn using certain special purpose symbols.

   (a) Algorithm   (b) Pseudocode

   (c) Flowchart   (d) Decision table

7. To arrange a table in descending order of field Salary the clause to be used is

   (a) Order by Salary   (b) Order by Salary Desc

   (c) Arrange by SalaryDesc   (d) Arrange by Salary

8. The BETWEEN clause can not be used for

   (a) Integer Fields   (b) Varchar Fields

   (c) Date Fields   (d) None of these

9. The constraint that ensures that the field does not get any NULL values is

   (a) NULL   (b) PRIMARY KEY

   (c) CHECK   (d) NOT NULL

10. Write the missing line to complete the code snippet below:

   file = open("data.txt", "r+")

   file.write("Python Programming")

   content = file.read()

   file.close()

11. State whether the following statement is True or False:

   Multiple `except` blocks can be used with a single `try` block in Python to handle different types of exceptions.

12. is and is not are_ _ _ _ _Operators.

   (a) Membership   (b) Identity

   (c) Logical   (d) Comparison

13. What will the following code display?

```
name = "Neha"
type (name)
```

   (a) Invalid function <type>   (b) <class 'str'>

   (c) <class 'int'>   (d) <class 'float'>

14. Which of the following is not required while specifying the connection string in database connection?

   (a) Host   (b) Table name

   (c) Username   (d) Password

15. The ALTER TABLE command belongs to............category

(a) DML   (b) TCL

(c) DDL   (d) DCL

16. Which of the following are possible relational operations?

(a) Join   (b) Selection

(c) Cartesian product   (d) All of these

17. Given a tuple tup = (20,50,10,60,30). The statement append(90) returns

(a) (20,50,10,60,30,90)   (b) (90)

(c) Error   (d) (30,90)

18. To open a text file for adding records keeping the existing records the mode should be

(a) ab   (b) xb

(c) rb   (d) w+

19. A device that connects two dissimilar networks is

(a) Modem   (b) Repeater

(c) Bridge   (d) Gateway

Directions : (Q.Nos. 20-21) are Assertion and Reason based questions.

20. Assertion (A) : Binary files are processed faster than text files.

Reasoning (R) : They are written in Binary format and are more close to the computer.

(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.

21. Assertion (A) : A function that is neither built in nor modular must be defined.

Reason (R) : The code of built in and modular functions are available for the Python compiler , but if the function is not defined anywhere the compiler cannot get the code.

(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.

SECTION B

22. Observe the code given below and find the output.
```
s="OceanView"
print(s[8] +s[2:] +str(len(s)))
```

23. What are some commonly used DBMS software packages?

24. What is the purpose of switch in a network?

or

Write names of few network devices.

25. (a) What is the output of below questions?
l1 = [23, 45, 19, 77, 10, 22]
(i) l1.sort()
(ii) max(l1)

(b) Find error in defination of the function given.
```
def finderrors(x=20,y)
    print(x+y*2)
```

26. (a) Write the full forms of
(i) HTML
(ii) HTTPs

(b) Write any two advantages of tree topology.

27. What will be the output of the following code?
```
empdict={'Eno':[1,2,3,4],  'Ename'  :  ['Raj',  'Seema',  'John',  'Smith'],
'Sal':[10000, 20000, 30000, 40000]}
print(empdict['Ename'][0], empdict['Sal'][0])
```

or

Write any two differences between Dictionary and Tuple.

28. Mention atleast three limitations of DBMS.

or

What are primary and alternate keys in a database? Provide suitable examples to explain each.

SECTION C

29. The binary file "data.dat" contains student records with the following structure:

Ano	Sname	Marks
1	Raj	850
⋮		
⋮		

Write a Python program to search for a student by their number (ID) entered by the user. If the student is not found, display an appropriate message.

or

Write a program with method countand ( ) to count the word 'and' or And' as an independent word in a text file "status.txt". e.g. if the content of the file "status. txt" is as follows:
Welcome to your one-step solutions for all your study, practice and assessment needs for various competitive & recruitment examinations and school segment. We have been working tirelessly for over a decade to make sure that you have best in class study resources because you deserve SUCCESS AND NOTHING LESS...
Then the output of the program should be: Count of _and_ in file is/are: 3

30. Write the Push operation of stack containing person names. Notice that the name should only accept characters, spaces and period(.) except digits. Assume that Pname is a class instance attribute.

or

Find the final contents of a stack that encounters the following tokens.
Assume that an operand is pushed to stack and a binary operator pops two operands from stack and pushes the result to the stack.
45, 30, + , 50, 80, +, +

31. Write user defined functions factors(num) and factorial(num) to find the factors and factorial of a number accepted from the user and passed to the functions from main function.

or

Riya wrote a program to search any string in text file "school". Help her to execute the program successfully.

```
def check () :
  datafile = open (.....)
  found = input ("Enter any string to
                  be searched : ")
  f = False
  for line in ....... :
    if found in line :
        f = .......
        break
  return f
f = check ()
if (f = =.......) :
      print ("True")
else :
      print (......)
```

(i) Riya should open which file to search any string?

(ii) Which value will assign to f in Line 7?

(iii) Fill the blank in Line 5.

SECTION E

32. (a) Underline the errors in the following code and write the correct code :

```
while s>0
  if a%2=0
      print(a%2)
  elseif a%3=0 then
      print(a%3)
```

(b) What is database connectivity? How to create a connection object?

or

(a) Differentiate between identifier and keyword.

(b) What conditions or terms are included by BD-API?

33. Consider the tables Hotel and Room given below :

Table : Hotel				
T Id	**C Name**	**Room ld**	**Dtof Arrival**	**Charges**
T1	Ritesh	R1	2016-09-09	1800
T2	Sumana	R2	2020-08-01	2000
T3	Abhi	R3	1995-04-05	3000
T4	Ram	R1	1994-02-02	2500
T5	Nitin	R2	NULL	7000

Table : Room		
RoomlD	**RoomType**	**FLoor**
R1	AC	First
R2	Deluxe	Second
R3	General	Second

With respect to the tables given above, write SQL commands for the following.

(i) Create the table hotel and insert the 1st record

(ii) Display the details of customers who have arrived after 01-05-2005

(iii) Display names and room types of customers whose charges are between 2000 and 3000.

(iv) Display Names of customers who are staying in "AC" rooms"

34. Write the SQL commands for (i) to (iv) on the basis of the table HOSPITAL

TABLE: HOSPITAL						
No	**Name**	**Age**	**Department**	**Date-ofadm**	**Cha-rges**	**Sex**
1	Sandeep	65	Surgery	23/02/98	300	M
2	Ravine	24	Orthopaedic	20/01/98	200	F
3	Karan	45	Orthopaedic	19/02/98	200	M
4	Tarun	12	Surgery	01/01/98	300	M

5	Zubin	36	ENT	12/01/98	250	M
6	Ketaki	16	ENT	24/02/98	300	F
7	Ankita	29	Cardiology	20/02/98	800	F
8	Zareen	45	Gynaecology	22/02/98	300	F
9	Kush	19	Cardiology	13/01/98	800	M
10	Shailya	31	Nuclear Medicine	19/02/98	400	M

(i)   To show all information about the patients of Cardiology Department.

(ii) To list the name of female patients, who are in Orthopaedic Department.

(iii) To list names of all patients with their date of admission in ascending order.

(iv) To display Patient's Name, Charges, Age for male patients only.

or

Write the command to view all the tables in database.

35. What does csv writer() function do?

Write a python program for operating on a csv file "people.csv" using following functions :

(a) addPeople() :To input details of people and add them to a csv file "people.csv" without removing the previous records. The record structure is as follows :

AdhrNo   Name City   Age

The file should store only those people whose age is greater than and equal to 18.

(b) getPeople() : To open the file "people.csv" and display records whose name starts with "P"

SECTION E

36. Consider the following table Cab :

Table : Cab			
Cab lD	**Cab Type**	**Nop**	**Rate**
Cb1	Sedan	4	40
Cb2	Yellow Taxi	5	25
Cb3	Mini	3	30
Cb4	Micro	2	20

(i)   Which column can serve as the primary key?

(ii) Write a command to display the fields of the table along with their types and sizes.

(iii) Write statements to :

(a) Add a new column Driver varchar(30)

(b) Change data type of Rate column to float(6,1).

or(Option for part (iii) only)

(a) To display the cab type whose rate is more than 25.

(b) To display cab id and Number of passengers for cab sedan.

37. Quick Learn University is establishing its academic blocks in Prayag Nagar and planning to set up a network. The university includes three academic blocks and a human resources center, as illustrated in the diagram below.
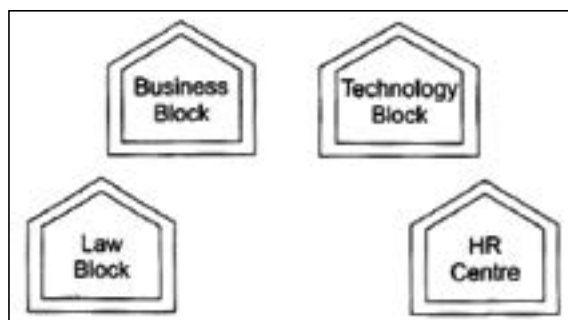
Centre to Centre distance between various blocks/Centre is as follows:

Law Block to Business Block	40 m
Law Block to Technology Block	80 m
Law Block to HR Centre	105 m
Business Block to Technology Block	30 m
Business Block to HR Centre	35 m
Technology Block to HR Centre	15 m

Number of computers in each of the blocks/centre are as follows:

Law Block	15
Technology Block	40
HR Centre	115
Business Block	25

(i)   Suggest the most suitable place (i.e. block/Centre) to install the server of this university with a suitable reason.

(ii) Suggest an ideal layout for connecting these block/Centre for a wired connectivity.

(iii) Which device you will suggest to be placed/installed in each of these blocks/Centre to efficiently connect all the computers with in these blocks/Centre ?

(iv) The university is planning to connect its admission office in the closest big city, which is more than 250 km from university, which type of network out of LAN, MAN or WAN will be formed? Justify your answer.

(v) Expand the following

LAN

WAN

END

Sample Paper 07

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False

   Integer is a mutable data type in Python.

2. Which of the following functions is used to write data to a binary file?

   (a) pickle()   (b) writer()

   (c) load()   (d) dump()

3. _____ can be created using the cursor() method of a connection object.

   (a) Cursor object   (b) Cursor variable

   (c) Connect   (d) None of these

4. _____command displays the contents of a table.

   (a) DISPLAY   (b) VIEW

   (c) SELECT   (d) SHOW

5. What will be the output of the following Python code?

   ```
   b = 1
   for a in range(1, 10, 2):
       b += a + 2
   ```

```
print(b)
```
(a) 31   (b) 33

(c) 36   (d) 39

6. What will be the output of the following code snippet?

phrase = "Deep Learning"

print(phrase[4::-1])

7. Which of the following Python function displays the memory id of a variable?

(a) type( )   (b) str( )

(c) getid( )   (d) id( )

8. Which of the following is an advantage of SQL?

(a) High speed   (b) Client/Server language

(c) Easy to learn   (d) All of these

9. Which operator is used for integer division?

(a) *   (b) //

(c) /   (d) **

10. Insert the missing statement to complete this code snippet:

```
file = open("notes.txt", "r+")
file.write("New Text")
print(file.read())
file.close()
```

11. State whether the following statement is True or False:

In Python, the `else` block following a `try` block is executed only when no exception occurs in the `try` block.

12. Predict the output of the following program:

```
a = 5
b = a = 15
c = (a < 15)
print ("a = ", a)
print ("b = ", b)
print ("c = ", c)
```

(a) a=15   (b) a=15

    b=15   b=10

    c=False   c=True

(c) a=15   (d) None of these

    b=None

    c=False

13. Given s=“AISSE@2023”. What will be the output of `print(s[-1: :-1])`?

(a) ‘3202@ESSIA’   (b) 3

(c) AISSE   (d) ESSIA

14. A primary key of a relation must be_ _ _ _ _.

(a) UNIQUE only   (b) NOT NULL only

(c) Both UNIQUE and NOT NULL   (d) Neither UNIQUE nor NOT NULL

15. Which clause is used to group records based on shared values within a specific field?

(a) JOIN   (b) GROUP

(c) GROUP BY   (d) AGGREGATE

16. Which Python function appends the elements of one list to the end of another list?

(a) join()   (b) add()

(c) append()   (d) extend()

17. Which of the following functions will read entire contents of a text file?

(a) read()   (b) readfull()

(c) readline()   (d) readfile()

18. What is another name for a cross join in SQL?

(a) Merging   (b) Cartesian product

(c) Natural join   (d) Equi join

19. Which protocol serves as the foundation for all application protocols?

(a) FTP   (b) TCP/IP

(c) IRCP   (d) Telnet

Direction : (Q.Nos. 20-21) are Assertion and Reason based questions.

20. Assertion (A) : Pickling is a way to convey a Python object into character stream.
Reason (R) : To perform pickling, the pickle module needs to be imported.

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

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

21. Assertion (A) : A recursive function does not require a loop.

Reason (R) : A recursive function calls itself again and again until a certain condition is true.

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

(d) A is false but R is true.

SECTION B

22. Examine the code provided below and determine the output:

```
s = "oceanview"
count = 0
for a in s:
    if a in "stuv":
        count += 1
print(count)
```

23. (a) Given the following code :

```
d={'Bed':145000, 'Almirah':9000,
                 'Chair':1000}
for v in d.keys():
    if d[v]>100000:
        d[v]- =10000
print(d)
```

What will be the output of the print statement?

(b) State the value stored in the variable Num after each of the following statements.

(i) Num = 2 * 3 − 4

(ii) Num = 2+3−1*3

(iii) Num = (2+3)*2

24. Provide a detailed explanation of a database and a Database Management System (DBMS).

25. What is the distinction between video conferencing and chat?

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

What is WWW?

26. (a) Write the full forms of :

(i) RJ45   (ii) XML

(b) Write one advantages of Bus topology compared to Star and one advantage of star topology compared to Bus.

27. What output will the following code produce?

```
y = str(456)
x = "hi" * 4

print(x, y)
x = "hi" + "there"
y = len(x)
print(y, x)
```

or

Write function names for the following with respect to strings.

(i) To make the first letter of a string in capital

(ii) To find the index of the 1st occurrence of a string in another

28. Define DDL and explain its commands with examples.

or

What is DML? Explain with its commands.

SECTION C

29. Write a Python program to open a binary file named "College.dat," which contains student records with the structure:

Roll   Name   SemPercentage

The program should display only the records of students whose percentage is above 30.

or

Create a method countopen() to count and display the number of lines that start with the word "OPEN" (case-insensitive) in a text file named "start.txt".

For example, if "start.txt" contains the following lines:

Get the data value to be deleted,

Open the file for reading from it.

Read the complete file into a list

Delete the data from the list

Open the file

Open same file for writing into it

Write the modified list into file.

Close the file.

The method should display

Total lines started with word 'OPEN' is/are: 3

30. Describe the traversal operation in a stack and provide the algorithm for traversing a stack to display its contents. There is no need to write the actual code.

or

Find the final contents of a stack that encounters the following tokens.

Assume that an operand is pushed to stack and a binary operator pops two operands from stack and pushes the result to the stack.

7,11,*,80,+,50,+

CLICK HERE TO SEE ANSWERS

31. Write a user-defined function that accepts a string and checks whether it is a palindrome (a string that reads the same forwards and backwards).

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

A program in python to modify records of a binary file "hotel.dat" using random access. The program would accept the room id , search the record by random access and display. It will then accept the new data and modify the file.

The file structure is :

Roomld   Customer Name   Days

```
import pickle
1st=[]
f=open("hotel.dat", "rb+")
ans='y'
while ans=='y':
    r=int(input("Enter roomid to
                    modify :"))
    1st=pickle.load(f)
    size=f.tell()
    f.seek(0)
    f.seek((r-1)*size)
    1st=pickle.load(f)
    print("old record ")
    print("Room Id :", 1st[0])
    print("Customer :", 1st[1])
    print("Days :", 1st[2])
    f.seek(0)
    ... ... ...     # Statement 1
    print("Enter new record ")
    nm=input("Enter, customer name
                         :")
    days=input("Enter days :")
    rs=str(r)
    1st=[rs,nm,days]
    pickle.dump(1st,f)
    ans=input("Modify another(y/n)")
f.close()
```

(i)   What type of data is returned by the load() method?

(ii) Which method closes a binary file?

(iii) What will be inserted in statement 1?

SECTION D

32. (a) Underline the errors in the following code and write the correct code:

```
s= WelcometoCS"
For a IN s :
    If a IN "aeiou" :
        print(a)
    else
        print("False")
```

(b) Write a code in Python to update the class of a student to 12 whose roll number is 22. The table structure is as follows :

RollNo   Name   Class   Perc

Note :

Database : PythonDB

Table : Student

Host : localhost

UserId : root

Password : arihant

or

(a) Write the output of the following function

```
def showOutput( ):
    num=4 + float(7)/int(2.0)
    print("num =", num)
```

(b) Write a code in Python to delete the record of a student whose rollno is 33. The table structure is as follows

RollNo   Name   Class   Perc

Note :

Database : PythonDB

Table : Student

Host : localhost

UserId : root

Password : arihant

33. (a) Consider the following tables PERSON and ORDERS

Table : PERSON			
P_Id	**Last_Name**	**First_Name**	**City**
1	Sharma	Abhay	Mumbai
2	Gupta	Mohan	Delhi
3	Verma	Akhil	Mumbai

Table : ORDERS		
O_Id	**Order_No**	**P_Id**
1	10050	3
2	25000	3
3	5687	1
4	45000	1
5	35000	15

With respect to the tables given above write a command to display the Lastname, Firstname and corresponding order number arranged by Lastname.

(b) With respect to the table PAYMENTS given below, write, output of the following questions.

TABLE : PAYMENTS			
EmpId	**Emp_Name**	**Salary**	**Department**
1	Ridhi	20000	D1

CLICK HERE TO SEE ANSWERS

2	Rohit	25000	D2
3	Rakesh	20000	D2
4	Roshan	44000	D1
5	Rohini	15000	D3
6	Radha	14000	D1

(i)   To display the average of employees salary from PAYMENTS table.

(ii) To count the total number of employees from PAYMENTS table Department wise

(iii) To count distinct values of column Department from PAYMENTS table.

(iv) To display department wise number of employees , but for only those departments where number of employees are more than 2.

34. Write SQL commands from (i) to (iv) on the basis of the table INTERIORS given below

TABLE : INTERIORS					
No	ITEMNAME	TYPE	DATEOF-STOCK	PRICE	DISC-OUNT
1	Red rose	Double Bed	23/02/02	32000	15
2	Soft touch	Baby cot	20/01/02	9000	10
3	Jerry's home	Baby cot	19/02/02	8500	10
4	Rough wood	Office Table	01/01/02	20000	20
5	Comfort zone	Double Bed	12/01/02	15000	20
6	Jerry look	Baby cot	24/02/02	7000	19
7	Lion king	Office Table	20/02/02	16000	20
8	Royal tiger	Sofa	22/02/02	30000	25
9	Park sitting	Sofa	13/12/01	9000	15
10	Dine Paradise	Dining Table	19/02/02	11000	15
11	White Wood	Double Bed	23/03/03	20000	20
12	James 007	Sofa	20/02/03	15000	15
13	Tom look	Baby cot	21/02/03	7000	10

(i)   To show all information about the Sofa from the INTERIORS table.

(ii) To list the ITEMNAME, which are priced at more than 10000 from the INTERIORS table.

(iii) To list ITEMNAME and TYPE of those items, in which DATEOFSTOCK is before 22/01/02 from the INTERIORS table in descending order of ITEMNAME.

(iv) To insert a new row in the INTERIORS table with the following data

```
{14, 'TrueIndian', 'Office Table', '25/03/03', 15000, 20}
```

or

Write the command to display the sum of prices of items of type "cot".

35. What is the purpose of the writerows() function for handling CSV files?

A binary file named "Hotel.dat" stores hotel customer details with the following structure:

Roomld   CustomerName   Days

Write a program in python for adding and displaying records from the binary file using following functions

(a) Reserve() : To add data of customers to the binary file.

(b) ShowReservations() : To open the file "Hotel.dat" and display all the records.

SECTION E

36. Tech Up Corporation (TUC) is a professional consultancy firm planning to establish new offices in India, with Hyderabad as its central hub. As their network consultant, you are tasked with assessing their requirements and recommending optimal solutions. Their queries are listed below from (i) to (v).

Physical locations of TUC's blocks:
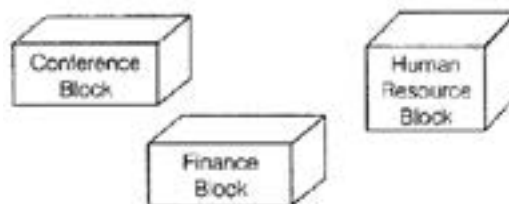
Block to block distances (in metre)

Block (From)	Block (To)	Distance
Human Resource	Conference	60
Human Resource	Finance	120
Conference	Finance	80

Expected number of computers to be installed in each block

Block	Computers
Human Resource	125
Finance	25
Conference	60

(i) What will the most appropriate block, where TUC should plan to install their server?

(ii) Draw a block to block cable layout to connect all the buildings in the most appropriate manner for efficient communication.

(iii) Write names of different types of Modems.

(iv) Which of the following devices will be suggested by you to connect each computer in each of the buildings?

(a) Gateway   (b) Switch   (c) Modem

(v) Company is planning to connect its Block in Hyderabad which is more than 20 km. Which type of network will be formed?

37. Consider the following table

TABLE : INTERIORS					
No	**ITEM NAME**	**TYPE**	**DATE OF STOCK**	**PRICE**	**DISCOUNT**
1	Red rose	Double Bed	23/02/02	32000	15
2	Soft touch	Baby cot	20/01/02	9000	10
3	Jerry's home	Baby cot	19/02/02	8500	10

(i)   What should be the data type for the DATEOFSTOCK column?

(ii) Write a command to add a new record as follows :

4, "Morris","Sofa Set"

Rest of the field values are not given

(iii) Write statements to :

(a) Write a command to display only the Column ITEMNAME, Net Amount(PRICE-DISCOUNT)

(b) Display only ITEMNAME and Discount column.

or

(Option for part (iii) only)

(a) Which clause is to be used to search non blank values in the table?

(b) Which command will be used to make the "No" column as the primary key?

END

Sample Paper 08

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False
    "A tuple is an Editable data store".

2. Determine the output of the following code:
    ```
    >>> a = 12
    >>> b = 4
    >>> print("Output is",(a+10*2+b))
    ```
    (a) Output is 32   (b) Output is 36

    (c) Output is None   (d) None of these

3. The _____ mode opens a file for both reading and writing.
    (a) wr   (b) rw

    (c) r+   (d) a+

4. Give the output for the following program segment given below.
    ```
    for i in range (-5,-7,-1):
        print (i + 1)
    ```
    (a) -7,-6,-5   (b) -5,-6,-7

    (c) No output   (d) Error

5. In the readline() function, a line is terminated by:

(a) '\n'   (b) EOF

(c) Either (a) or (b)   (d) None of these

6. What will be the output of the following code snippet?

text = "Machine Learning"

print(text[7:2:-2])

7. The join operation can combine _ _ _ _ _ _ _ _ _ _ tables.s.

(a) 1   (b) 2

(c) 3   (d) Multiple

8. A table can have maximum..........primary key(s).

(a) 1   (b) 2

(c) 3   (d) Many

9. Which comments start with # symbol?

(a) Double line   (b) Multi-line

(c) Single line   (d) All of these

10. Identify the missing code to complete this snippet:

file = open("logs.txt", "r")

logs = file.readlines()

print(logs[0])

file.close()

11. What will be the output of the following code snippet?

word = "Comprehension"

print(word[::3])

12. To ensure that values in the Salary column of a table are restricted to being more than 50000, which constraint should be used?

(a) NULL   (b) PRIMARY KEY

(c) CHECK   (d) NOT NULL

13. To insert a record from Python to a mysql database the...........function needs to be executed.

(a) execute()   (b) executeUpdate()

(c) executeQuery()   (d) None of these

14. You can repeat the elements of the tuple using which operator?

(a) *   (b) +

(c) **   (d) %

15. A table can be sorted by............fields.

(a) 1   (b) 2

(c) More than 2   (d) None of these

16. A device that connects the network cable to the NIC is

(a) RJ45   (b) Repeater

(c) Hub   (d) Switch

17. Which index number represents the last character of a string?

(a) -1 (b) 1

(c) 0   (d) $n-1$

18. What will be the output of the following code?

```
a, b = 8, 4
x, y = a + b, b - 2
z = x - y
print("x:", x, "y:", y, "z:", z)
```

(a) x: 12 y:3 z:10   (b) x: 10 y:3 z:12

(c) x: 16 y:3 z:12   (d) x: 12 y:2 z:10

19. The............clause groups records by common values of a column.

(a) BETWEEN   (b) ORDER BY

(c) HAVING   (d) GROUP BY

Directions (Q. Nos. 20-21) are Assertion and Reason based questions.

20. Assertion (A) : Default parameters to a function are not compulsory but are a good practice to specify.

Reason (R) : If default parameters are specified the formal parameters will take the default values , if any of the actual parameters are not passed.

(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.

21. **Assertion (A) :** A recursive function requires a base condition.

    Reason (R) : The base condition is the one that makes the function exit at a point.

    (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.

SECTION B

22. Determine the output for the following Python expressions:

    (i) `'amazing'.center(15, '#')`

    (ii) `'python123'.isalnum()`

23. (a) Given the following code :

```
str1 = input ("Enter the string:")
final = ""
for i in range(len(str1)):
    if (i%2 == 0):
    final = final + str1[i]
print("Modified string is : ",
                                final)
```

    What is the above code doing?

    (b) Consider the following list and answer the below questions.

```
l = [6, 9, 8, 'Hi', 'Hello', 45,
                    23, 'New']
```

    (i) `l[4:]`

    (ii) `l[-4]`

    (iii) `l[2:5]`

    (iv) `'World' in l`

24. Identify the types of networks formed in the following cases :

    (a) Two friends sharing files between a distance of 1000 km.

    (b) A device transmitting voice to stations within a distance of 30 km.

or

    Write names of protocols used in following cases :

    (a) A network user downloading a photograph from a server

    (b) Two friends chatting over the web.

25. Write few advantages of SQL.

26. (a) Why is 256.200.192.1 not considered a valid IP address?

    (b) What is the purpose of an IP address and how does it differ from a domain name? Provide examples to illustrate each.

27. Distinguish between tuple and list.

or

How can you add following data in empty dictionary?

Keys	Values
A	One
B	Two
C	Three
D	Four

28. What is equi join ? Explain with an example.

or

Identify the aggregate functions from the following list:
COUNT() , LEFT() , RIGHT() , MAX() , AVG() , TRIM()

SECTION C

29. Write a method Filterwords() to find and display words from the text file NewsLetter.txt that have a length of less than 4 characters.

or

Write a method countAN() that checks the number of occurrance of "A" and "N" in a text file "Story.txt".

30. A linear stack named status contains the following information:
Employee's Phone Number
Employee's Name
Write the methods needed to perform the specified operations on the status stack.
(i) Push_element ( ) To Push an object containing Phone number of Employee and Name of Employee into the stack.
(ii) Pop_element ( ) To Pop an object from the stack and to release the memory.

or

Write a function to pop an element from a stack "s" using a function stackpop().

31. Write a user-defined function patterns(n) to display the following pattern for n lines, based on the number passed to the function. The number should be entered in the main() function..
Example :
Enter a number : 4
4
4 4
4 4 4
4 4 4 4
Enter a number 5
5
5 5
5 5 5

```
5 5 5 5
5 5 5 5 5
```

or

A user defined method to open a text file "para.txt" and display count of number of 'c' or 'C' and number of 'e' or 'E' separately.

```
def test():
    f=open("Para.TXT")
    n1=0
    n2=0
    while True:
      l=...........    //Statement
      if not l:
         break
      for i in l:
         if (i =='E' or i =='e'):
             n1=n1+1
         elif(i=='C' or i=='c'):
             n2=n2+1
    print(n1)
    print(n2)
    f.close()
```

(a) Which module needs to be imported to use text file handling functions?

(b) Write the functionname to close a file object.

(c) Write the code best suitable for statement as marked.

SECTION D

32. (a) Write a program to find all numbers between 200 and 300 (inclusive) that are divisible by 7 but not multiples of 5.

(b) Consider the table Faculty whose columns' name are

```
F_ID, Fname, Lname, Hire_date,
Salary, Course_name
```

Write the code to insert the following record into the above table.

| 101 | Riya | Sharma | 12-10-2004 | 35000 | Java Advance |
| 102 | Kiyaan | Mishra | 3-12-2010 | 28000 | Data Structure |

or

(a) Identify which of the following names are invalid and explain why:

(i) PaidInterest

(ii) S-num

(iii) Percent

(iv) 123

(b) What is the utility of fetchall() method? Write a code to fetch all the records of a Student table from PythonDB Database.

Note :

Host : localhost

Database : PythonDB

User : root

Password:arihant

Table : Student

33. Which file can be opened with notepad as well as MS Excel?

A CSV file "Garment.csv" file exists containing records of different types of garments as per following structure.
GarmentlD   Type   Gender   Cost
Write a python program to add and search records of garments from the csv file and display using the following functions :

(a) AddGarment() : Function to input details of garments and store them to the file "Garment.csv", if the garment type is "cotton" or "silk".

(b) ShowGarments() : To open the file " Garment.csv", display details and number of "silk".garments

34. (a) Consider the tables EMP and SALGRADE storing details of employees and their salaries.

Table: EMP			
empno	**ename**	**sal**	**date**
110	Priya	7000	11-11-2010
111	Seema	14000	15-02-2014
151	Sachin	30000	18-04-2015
142	Deepa	25000	20-05-2015

Table : SALGRADE				
empno	**city**	**lowsal**	**hisal**	**grade**
110	Delhi	5000	10000	2
111	NCR	11000	13000	1
142	Meerut	10000	20000	5

With respect to the tables given above write a command to display the Employee names and the corresponding cities.

(b) With respect to the tables given above , write commands for the following :

(i) To display the average salaries of all employees who are not from Delhi.

(ii) To display, maximum salary from the EMP table among employees whose date is after "2014"

(iii) To find the count of employees who are from "Delhi"

(iv) To display each employee's name and Grade.

35. Given the following tables for a database LIBRARY

Write SQL commands (i) to (iv) with respect to the tables BOOKS and ISSUED

TABLE: BOOKS						
Book_Id	Book Name	Author_Name	Publishers	Price	Type	Qty
F0001	The Tears	William Hopkins	First Publ	750	Fiction	10
F0002	Thunder bolts	Anna Roberts	First Publ	700	Fiction	5
T0001	My First C++	Brain & Brooke	EPB	250	Text	10
T0002	C++ Brainworks	A.W. Rossaine	TDH	325	Text	5
C0001	Fast Cook	Lata Kapoor	EPB	350	Cookery	8

TABLE : ISSUED	
Book_Id	Quantity_Issued
F0001	3
T0001	1
C0001	5

(i)   To show Book name, Author name and Price of books of EPB Publishers.

(ii) To list the names from books of Fiction type.

(iii) To display the names and price of the books in descending order of their price.

(iv) To increase the price of all books of First Publ Publishers by 50.

or

Write the command to remove all the records of the BOOKS table keeping the structure.

SECTION E

36. G.R.K International Inc. is planning to connect its Bengaluru Office Setup with its Head Office in Delhi. The Bengaluru Office G.R.K. International Inc. is spread across an area of approx. 1 square kilometres consisting of 3 blocks. Human Resources, Academics and Administration. You as a network expert have to suggest answers to the questions (i) to (v) raised by them.

Note Keep the distances between blocks and number of computers in each block in mind, while providing them the solutions.
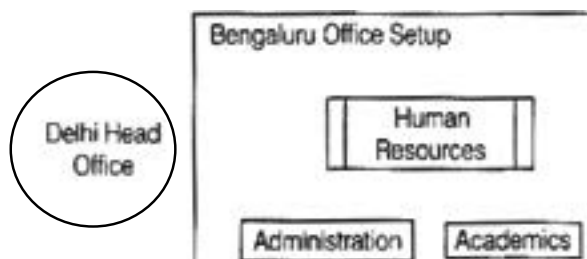
Shortest distances between various blocks

Human Resources to Administration	100 m
Human Resources to Academics	65 m

Academics to Administration	110 m
Delhi Head Office to Bengaluru Office Setup	2350 km

Number of computers installed at various blocks

Block	Number of Computers
Human Resources	155
Administration	20
Academics	100
Delhi Head Office	20

(i) Suggest the most suitable block in the Bengaluru Office Setup to host the server. Give a suitable reason with your suggestion.

(ii) Suggest the cable layout among the various blocks within the Bengaluru Office Setup for connecting the blocks.

(iii) Suggest the placement of switch.

(iv) Suggest the most suitable media to provide secure, fast and reliable data connectivity between Delhi Head Office and the Bengaluru Office Setup.

(v) Expand the following

WAN

LAN

37. Consider the following table

TABLE : PATIENTS						
No	Name	Age	Department	Dateofadm	Charges	Sex
1	Kettu	16	ENT	24/02/23	300	F
2	Ankita	29	Cardiology	20/02/23	800	F
3	Rekha	45	Gynaecology	22/02/23	300	F
4	Kushi	19	Cardiology	13/01/23	800	M
5	Antim	31	Nuclear Medicine	19/02/23	400	M

(i) What should be the width of the Dateofadm field?

(ii) Write commands to remove the records of "Cardiology" department.

(iii) Write statements to :

(a) Display a report showing Name, charges and discount (15%) for all patients.

(b) Display names of female patients .

or

(option for part (iii) only)

(a) Which function will find the total charges of all patients?

(b) Name the constraint that will restrict duplicate values in Name column.

END

CLICK HERE TO SEE ANSWERS

Sample Paper 09

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False

   "A tuple is a immutable data type."

2. The alternate to math.pow() function is_____operator.

   (a) **   (b) ^·

   (c) + =   (d) /

3. Two tables are joined using a common field known as _____.

   (a) Alternate key   (b) Foreign key

   (c) Candidate key   (d) None of these

4. To print all elements of tuple in reverse order using_____.

   (a) [: − 1]   (b) [: : − 1]

   (c) [1 : :]   (d) [: : 1]

5. Given : s="Rajkumar@gmail.com". What will be the output of `print(s[2: :2])`?

   (a) 'juagalcm'   (b) 'jua@galcm'

   (c) 'ajua@galcm''   (d) 'jua@gmalcm''

6. What will be the output of the following code snippet?

sentence = "Learning Python"

print(sentence[8:15])

7. Which of the following Python functions do not require importing of a module?

(a) type()   (b) input()

(c) sqrt()   (d) Both (a) and (b)

8. Which of the following modes open a text file, such that the new data is written in it keeping the existing contents ?

(a) r+   (b) rw+

(c) w+   (d) a

9. The_ _ _ _ _clause with the update command specifies the attribute to be modified.

(a) FIELD   (b) ATTRIBUTE

(c) CHANGE   (d) SET

10. Complete the code by filling in the blank with the appropriate line to move the file pointer:

```
file = open ("output.txt", "r")
data = file.read(20)
file.seek(5)    # Move the file pointer to position 5
next_data = file.read(10)
file.close()
```

11. State whether the following statement is True or False:

The `raise` statement in Python is used to manually trigger an exception.

12. Which type of network is typically used for a single site, covering a small range around an individual, such as in a home or office setup?

(a) DSL   (b) RAM

(c) WAN   (d) PAN

13. Determine the output of the following code:

```
s1 = 'Hello'
s2 = 'World'
s = s1 + s2
print(s)
```

(a) Hello World   (b) HelloWorld

(c) 'Hellow' 'World'   (d) Error

14. The_ _ _ _ _clause with GROUP BY, can filter groups from the query output.

(a) WHERE   (b) FILTER

(c) HAVING   (d) CHECK

15. Given a list L= [6,12,9,40,2,1]. Which of the following statements will arrange the list in reverse order

(a) L.arrange()   (b) L.sort()

(c) L.sort(reverse=True)   (d) L.sort(reverse=False)

16. Which method returns the next row from the result set as a tuple?

(a) fetchone( )   (b) fetchmany( )

(c) fetchall( )   (d) rowcount

17. An alternate key can be

(a) only 1 in a table.   (b) a table can have maximum 2 alternate keys.

(c) a table can have at most 3 alternate keys.   (d) multiple in a relation.

18. Which SQL category provides statements for manipulating database objects?

(a) DDL   (b) DML

(c) DCL   (d) TCL

19. Which attribute is used to return access mode with that file was opened?

(a) file.mode   (b) mode.file

(c) file*mode   (d) None of these

Directions : (Q. Nos. 20 and 21) are Assertion and Reason based questions.

20. Assertion (A) : A python function can return more than one value to the calling function.

Reason (R) : The return statement takes only a list as parameter.

(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) : While opening a binary file the mode may not be specified.

Reason (R) : The open function for file opening by default takes the mode parameter as 'rb' for binary files, if no mode is specified.

(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. Find the output of the following code :
```
i = 1
while(i < 5):
    print(i)
    i = i * 2
```

23. (a) Correct the error if any in the following statement.

    (i) `a + 5 = b`

    (ii) `1 = 2b + c * d`

    (iii) `name = Aryan`

    (iv) `a = 20`

       `print a;`

  (b) Evaluate the following expression

    If $a = b = 10$, $c = 5$

    $a = b*3//4 + c//4 + 4 - b + 5//6$

24. Provide one appropriate example of a URL and a domain name.

or

Is it possible to use a URL to access a webpage? If so, how?

25. Explain the UPDATE command in SQL, including its basic syntax and an example.

26. (a) Write any two characteristics of IP address.

  (b) What is VoIP?

27. Write the one example of following terms.

  (i) Identifier   (ii) Punctuator

  (iii) Keyword   (iv) Constant

or

What will be the output of the following code?
```
a, b = 8, 4
x, y = a + b, b - 2
z = x - y
print("x:", x, "y:", y, "z:", z)
```

28. Expand the following abbreviation :

  (i) SQL   (ii) DML

  (iii) DDL   (iv) TCL

or

Mention two characteristics of SQL.

SECTION C

29. Write a Python function that accepts a sentence and counts the occurrences of the words "is" and "was".
Example
Input: "It is what it is. The situation was complex and still is."
Output:
Number of "is": 3
Number of "was": 1

or

Write a definition of a function that takes input a sentence and display the list of words that start with a lowercase vowel and list of words that start with a uppercase vowel separately.
Example
Input : A quick black elephant enters Into a jungle.
Output
List of words starting with lowercase vowels ['elephant', 'enters', 'a']
List of words starting with uppercase vowels ['A', 'Into']

30. How can you create a Python function to repeatedly accept person names and add them to a list, ensuring that each name only contains letters, spaces, and periods (.) without any digits?

or

Find the final contents of a stack that encounters the following tokens.
Assume that an operand is pushed to stack and a binary operator pops two operands from stack and pushes the result to the stack.
100,8,3,*,50,2,+,+,*

31. Write a program that calculates the sum and mean of a series of numbers entered by the user.

or

A user-defined method to open a text file "para.txt" and write its contents to another file fter removing the 3rd line

```
def Func():
    with open ('Para.txt', 'r') as f:
        l=f.readlines()
    f.close()
    print(l)
    del l[3]
    print(l)
    f=open ('Para.txt', 'w')
    f...........
    f.close()
```

(a) Which module needs to be imported to use operating system functions like rename() and remove().

(b) Write the function name to open a text file.

(c) Fill the blank as marked in above code.

SECTION D

32. (a) Write a Python program to find maximum and minimum elements in a tuple.

(b) Consider the table MobileStock with following fields

`M_Id, M_Name, M_Qty, M_Supplier`

Write the Python code to fetch all records with fields M_Id, M_Name and M_Supplier from database Mobile.

or

(a) Which of the following are invalid names and why?

   (i) PaidInterest   (ii) S-num

   (iii) Percent   (iv) 123

(b) Write the steps for Database connectivity with short explanation of each step.

33. What does tell() method do?

(a) AddRegistration() :To accept more student registration data and store them to the binary file keeping the existing registration data.

A Binary file "Registration.dat" exists storing details of students who have been registeredfor CBSE board exams. The file stores following data of students :

RegnNo   StudName   class   No of subjects

(b) CountRegistrations() : Display count of registrations using the functions.

34. Consider the following tables PRODUCT and CLIENT

TABLE : PRODUCT			
PID	**ProductName**	**Manufacturer**	**Price**
TP01	Powder	LAK	40
FW05	Face Cleaner	ABC	45
BS01	Liquid Soap	ABC	55
SH06	Dove Shampoo	XYZ	120
FW12	Face Wash	XYZ	95

TABLE : CLIENT			
C_ID	**ClientName**	**City**	**P_ID**
01	Cosmetic Shop	Delhi	FW05
06	Total Health	Mumbai	BS01
12	Life care	Delhi	SH06
15	Pretty Store	Delhi	FW12
16	Dreams	Bengaluru	TP01

(a) To display the ClientName, City from table CLIENT and ProductName and Price from table PRODUCT, with their corresponding matching P_ID.

(b) Write SQL queries for statements (i) to (iv)

(i) To display the details of those Clients, whose City is Delhi.

(ii) To display the details of products, whose Price is in the range of 50 to 100 (both values included).

(iii) To display product name and their manufacturer whose Price is more than 100.

(iv) To display client name for those whose product id is FW12.

35. Write SQL commands (i) to (iv) for the following tables :

TABLE : STUDENT						
S NO	**NAME**	**STREAM**	**FEES**	**AGE**	**SEX**	**AID**
1	RAJAN KUMAR	COMPUTER	750.00	17	M	A1
2	DEEPA JENEJA	COMPUTER	750.00	18	F	A2
3	KESHAR MEHRA	BIOLOGY	500.00	16	M	A2
4	SACHIN SINGH	ENG. DR	350.00	18	M	A1
5	PRACHI	ECONOMICS	300.00	19	F	A3
6	NISHA ARORA	COMPUTER	750.00	15	F	A3
7	NEEL KUMAR	ECONOMICS	300.00	16	M	A1
8	SARIKA VASWANI	BIOLOGY	500.00	15	F	A1

TABLE: ADDRESS	
AID	**City**
Al	Jaipur
A2	Bengaluru
A3	Delhi

(i) List the name of all the students, who have taken stream as COMPUTER.

(ii) To count the number of female students.

(iii) To display the number of students stream wise.

(iv) To display names of the students with corresponding cities.

or

Write the command to display all the tables in the database.

SECTION E

36. Expertia Professional Global (EPG) is an online corporate training provider specializing in IT-related courses. The company is establishing a new campus in Mumbai, and as a network expert, you are tasked with analyzing the physical layout of various buildings and determining the optimal number of computers to be installed in each location. During the planning phase, you must provide the most effective solutions for the queries (i) to (v) that have been raised by the company..

Physical locations of the buildings of EPG
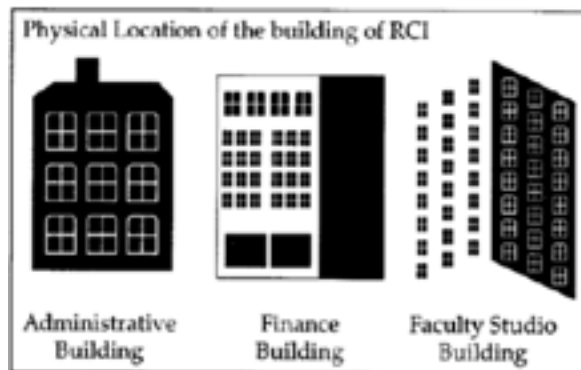
Building to building distance (in metre)

From	To	Distance
Administrative Building	Finance Building	60
Administrative Building	Faculty Studio Building	120
Finance Building	Faculty Studio Building	70

Expected computers to be installed in each building

Buildings	Computers
Administrative Building	20
Finance Building	40
Faculty Studio Building	120

(i) Suggest the most appropriate building, where EPG should plan to install the server.

(ii) Suggest the most appropriate building to building cable layout to connect all three buildings for efficient communication.

(iii) Which type of network out of the following is formed by connection the computers of these three buildings?

(a) LAN   (b) MAN   (c) WAN

(iv) Write the difference between LAN and MAN.

(v) Expand the following

(a) WAN   (b) MAN

37. Consider the following table ORDERS :

TABLE : ORDERS			
O_Id	**Order Date**	**OrderPrice**	**Customer**
1	2008/11/12	1000	Hansen
2	2008/10/23	1600	Nilsen
3	2008/09/02	700	Hansen
4	2008/09/03	300	Hansen
5	2008/08/30	2000	Jensen
6	2008/10/04	100	Nilsen

(i)   Write a statement to create the above table.

(ii) Write a command to change the width of Customer column to varchar(30)

(iii) Write statements to :

   (a) Display the field names, their type , size and constraints .

   (b) Display details of orders where orderprice is in the range 500 to 1500

or (Option for part iii only)

   (a) Write a command to increase orderprice of all orders by 15%.

   (b) Name the constraint that will restrict both NULL and DUPLICATE values in the O_Id field.

END

Sample Paper 10

Computer Science (083)

CLASS XII 2024-25

Time: 3 Hours   **Max. Marks: 70**

General Instructions:

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

SECTION A

1. State True or False
    'A dictionary is ordered by index".

2. The output of print(math.ceil(17.34)) is
    (a) 18   (b) 17
    (c) 10   (d) 20

3. The...........clause is used in SQL to specify a range of values.
    (a) WHERE   (b) DROP
    (c) BETWEEN   (d) RANGE

4. Two friends have connected their computers but are experiencing weak signals. Which device should they use to improve signal strength?
    (a) Repeater   (b) Hub
    (c) Switch   (d) Modem

5. What will be the output of the following code snippet?
    phrase = "Database Management"
    print(phrase[-5:-15:-4])

6. _____method creates a cursor object while connecting a Python application with a Mysql database.

   (a) connection( )   (b) connect( )

   (c) cursor( )   (d) None of these

7. In which mode is a file opened by default?

   (a) r   (b) rw+

   (c) w   (d) a

8. Which attribute is used to return access mode with that file was opened?

   (a) mode.file   (b) mode.file.name

   (c) file.mode   (d) file.mode.type

9. Identify the option that is not a DDL (Data Definition Language) command:

   (a) ALTER   (b) CREATE

   (c) DROP   (d) DELETE

10. Fill in the blank to finish the code snippet:

   file = open("datafile.txt", "r")

   file.seek(30)

   data = file.read(20)

   _____

   print(file.read())

   file.close()

11. State whether the following statement is True or False:

   The `try` and `except` blocks in Python are used for debugging purposes only.

12. Which module is required to use the mode function?

   (a) math   (b) statistics

   (c) random   (d) Pandas

13. The.........command can be used to remove all records of a table along with the table structure.

   (a) DELETE TABLE   (b) DROP TABLE

   (c) REMOVE TABLE   (d) None of these

14. What is the output of the following code?

```
a = 5
b = 3
print(a + 10 * 2 + b)
```

   (a) 32   (b) 28

   (c) 40   (d) 45

15. Which function is used to generate a sequence of numbers over a period of time?

(a) range()   (b) len()

(c) limit()   (d) lim()

16. Which of the following symbol is used in Python for comments?

(a) $ (b) @

(c) //   (d) #

17. Given a list Lst= [65,182,90,420,20,10]. What will be the correct statement to take out the 3rd element from the list?

(a) Lst.pop(2)   (b) L.find(2)

(c) L.pop(−1)   (d) L.del(90)

18. What is the relationship between Primary key, Candidate key, and Alternate key?

(a) Primary key = Candidate key - Alternate key

(b) Candidate key= Primary key - Alternate key

(c) Alternate key= Primary key+ Candidate key

(d) None of the above

19. The first integrity rule for relational databases ensures that_____

(a) Primary key is unique

(b) Foreign key is unique

(c) Primary key is unique and NOT NULL

(d) There is only one candidate key

Directions (Q.Nos. 20-21) are Assertion and Reason based questions.

20. Assertion (A) : User-defined functions must stay in a Python module.

Reason (R) : Each user-defined function must stay in a module ,which is linked to a folder where all the user defined functions of the module stay.

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

(d) A is false but R is true.

21. Assertion (A) : Python supports addition of data in file , preserving the previous data.

Reason (R) : The write mode erases all previous data of a pre-existing file.

(a) Both A and R are true and R is the correct explanation for A.

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

(c) A is true but R is false.

(d) A is false but R is true.

CLICK HERE TO SEE ANSWERS

SECTION B

22. Write the corresponding Python expression for the following mathematical expression.

(i) $z = \dfrac{a}{a} + b - d^2$

(ii) $z = x^2 + y^3$

23. (a) Identify which of the following identifiers are valid. If any are invalid, provide the reason..

  (i) name_1   (ii) _SUM

  (iii) $Sum   (iv) num ^ 2

(b) Find the output of the following code

```
i=1
while (i<4):
    print(i)
    i=i*2
```

24. Mr. GopiNath, Associate Manager of Unit Nations corporate, recently discovered that the communication between his company's accounts office and HR office is extremely slow, and signals drop quite frequently. These offices are 120 meters apart and connected by an Ethernet cable.

(i) Suggest him a device which can be installed in between the office for smooth communication.

(ii) What type of network is formed by having this kind of connectivity out of LAN, MAN and WAN?

or

Define hub and write its functions and types.

25. Differentiate between char(n) and varchar(n) data types with respect to databases.

26. (a) Mention any two advantages of E-mail over conventional, mail.

(b) Mr. Lal owns a factory which manufactures automobile spare parts. Suggest him the advantages of having a web page for his factory

27. Name the tokens that are available in Python.

or

Find the syntax error in the following program and underline after correct them.

```
90 = w
while(w > 60)
    print(w)
    w = w - 50
```

28. Explain the use of ORDER BY clause.

or

What are DDL and DML?

SECTION C

29. Write a method countFile() that counts and displays the number of lines starting with the word "FILE" (considering both lowercase and uppercase) in the text file "start.txt".

e.g. If the file "start.txt" contains the following lines:

Get the data value to be deleted,
Open the file for reading from it.
Read the complete file into a list
Delete the data from the list
Open the file
Open same file for writing into it
Write the modified list into file.
Close the file.
The method should display
Total lines started with word 'FILE' is/are: 0

or

Define a function that takes a sentence as input and displays a list of words that end with a lowercase vowel and a list of words that end with a lowercase consonant.

30. Write the Push operation for a stack that stores person names. Ensure that the names only accept characters, spaces, and periods (.), excluding digits. Assume that Pname is an instance attribute of the class.

or

Determine the final contents of a stack that processes the following tokens. Assume that an operand is pushed onto the stack, and a binary operator pops two operands from the stack, performs the operation, and then pushes the result back onto the stack..
(100, 8, 3, *, 50, 2, +, +, *)

31. Write a program that counts how often each element appears in a list provided by the user.

or

A user-defined method to open the text file "Author.txt" and display the lines that contain an even number of words.

```
def evenwords():
    f=open("Author.txt")
    ln=f.readlines()
    for line in ln:
        linex=...........// Statement
        if len(linex)%2==0:
            print(line)
    f.close()
```

(a) How is readline() method different from readlines() method in Python?

(b) Write the use of the reader object in csv file operations.

(c) Fill the blank as marked statement.

SECTION D

32. (a) Write a Python program to merge the following dictionaries into a new one:

```
d1 = {'X': 15, 'Y': 25}
d2 = {'Z': 35, 'W': 45}
d3 = {'P': 55, 'Q': 65}
```

(b) Consider the table MobileStock with following fields

M_Id, M_Name, M_Qty, M_Supplier

Write the Python code to fetch all records with fields M_Id, M_Name and M_Supplier from database Mobile.

or

(a) Sohan has a list containing 8 integers as marks of subject Science. You need to help him to create a program with separate user defined function to perform the following operations based on the list.

(i) Push those marks into a stack which are greater than 75.

(ii) Pop and display the content of the stack.

Simple Input

Marks = [75, 80, 56, 90, 45, 62, 76, 72]

Sample Output

80 90 76

(b) Consider the following table Traders with following fields

TCode	TName	City
T01	Electronic Sales	Mumbai
T03	Busy Store Corp	Delhi
T02	Disp House Inc	Chennai

Write Python code to display the names of those traders who are either from Delhi or from Mumbai.

33. What is difference between tell() and seek() methods?

A Binary file "lottery.dat" stores details of lottery ticket holders . The file stores the following details :
TicketNo   State   Type   Prizemoney
Write a program using two functions to operate the file data.

(a) AddBuyers(State) : To accept more ticket details and store them into the file only if the ticket is not from state passed as parameter to the function.

(b) TicketSearch(tid) : To open the file "lottery.dot" and display details of the ticket whose id is supplied as the parameter to the function.

34. Consider the tables FAMILY and Occupation:

TABLE FAMILY					
No	Name	Female Members	Male Members	Income	Occup-ationId
1	Mishra	3	2	7000	O1
2	Gupta	4	1	50000	O2
3	Khan	6	3	8000	O2
4	Chaddha	2	2	25000	O1

5	Yadav	7	2	20000	O3
6	Joshi	3	2	14000	O2
7	Maurya	6	3	5000	O1
8	Rao	5	2	10000	O3

Table : OCCUPATION	
OccupationId	**Type**
O1	Service
O2	Business
O3	Mixed

(a) To display Family name , corresponding occupation and income where male members are more than 2.

(b) Write SQL queries for statements (i) to (iv) based on tables FAMILY and Occupation.

   (i) To select all the information of family, whose Occupation is Service.

   (ii) To list the name of family, where female members are more than 3.

   (iii) To list all names of family with income in ascending order.

   (iv) To count the number of family, whose income is less than 10000.

35. Study the following tables DOCTOR and SALARY and write SQL commands for the questions (i) to (iv).

TABLE: DOCTOR				
ID	**NAME**	**DEPT**	**SEX**	**EXPER-IENCE**
101	John	ENT	M	12
104	Smith	ORTHOPEDIC	M	5
107	George	CARDIOLOGY	M	10
114	Lara	SKIN	F	3
109	K George	MEDICINE	F	9
105	Johnson	ORTHOPEDIC	M	10
117	Lucy	ENT	F	3
111	Bill	MEDICINE	F	12
130	Morphy	ORTHOPEDIC	M	15

TABLE: SALARY			
ID	**BASIC**	**ALLOWANCE**	**CONSULTATION**
101	12000	1000	300
104	23000	2300	500
107	32000	4000	500
114	12000	5200	100
109	42000	1700	200
105	18900	1690	300
130	21700	2600	300

CLICK HERE TO SEE ANSWERS

(i) Display NAME of all doctors who are in MEDICINE department having more than 10yrs experience from the table DOCTOR.

(ii) Display the average salary of all doctors working in ENT department using the tables DOCTOR and SALARY. SALARY = BASIC + ALLOWANCE.

(iii) Display the minimum ALLOWANCE of female doctors.

(iv) Display the highest consultation fee among all male doctors.

or

Write the command to change the data type of consultation to double(8,3).

SECTION E

36. Workalot Consultants are establishing a secure network for their office campus in Gurgaon to support their daily office and web-based activities. They plan to set up connectivity between three buildings on the campus and the head office located in Mumbai. Please answer the questions (i) to (v) after reviewing the building positions and other details provided below.
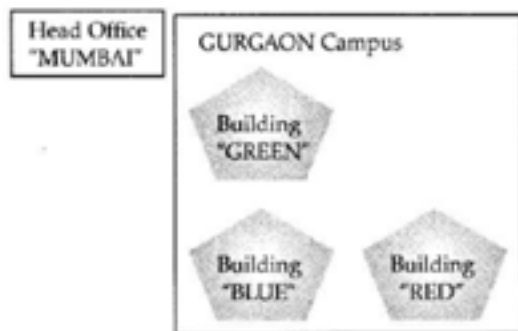
Distance between various buildings

Building GREEN to Building RED	110 m
Building GREEN to Building BLUE	45 m
Building BLUE to Building RED	65 m
Gurgaon Campus to Head Office	1760 km

Number of computers

Building GREEN	32
Building RED	150
Building BLUE	45
Head Office	10

(i) Suggest the most suitable place (i.e. building) to house the server of this organisation. Also, give a reason to justify your suggested location.

(ii) Suggest a cable layout of connections between the buildings inside the campus.

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

(a) Switch

(b) Repeater

(iv) Write the use of Modem in a network.

(v) What is the use of firewall in network?

37. Consider the following table FLIGHTS :

TABLE : FLIGHTS				
FL_NO	**STARTING**	**ENDING**	**NO_FLIGHT**	**NO_STOPS**
IC301	MUMBAI	DELHI	8	0
IC799	BENGALURU	DELHI	2	1
MC101	INDORE	MUMBAI	3	0
IC302	DELHI	MUMBAI	8	0
AB812	KANPUR	BENGA- LURU	3	1
IC899	MUMBAI	KOCHI	1	4
AM501	DELHI	TRIVAN- DRUM	1	5
MU499	MUMBAI	MADRAS	3	3
IC701	DELHI	AHME- DABAD	4	0

(i) The command to create the table was written as :

Create table FLIGHTS(FL_NO integer, STARTING char(20), ENDING char(30), NO_FLIGHT integer, NO_STOPS integer);

What is wrong with command ?

(ii) What is the cardinality of the table ?

(iii) Which functions will be used to :

(a) Display total number of flights .

(b) Display number of flights whose FL_NO starts with "IC"

or

(option for part (iii) only)

Write function names to :

(a) Show the average Number of stops.

(b) Show the maximum number of stops.