



6	Write a statement in Python to declare a dictionary whose keys are 2,3,4 and values are Monday, Tuesday and Wednesday respectively.	1
7	A tuple is declared as T= (1,4,7,6,8) What will be the value of sum(T)?	1
8	Name the built-in mathematical function / method that is used to return an absolute value of a number.	1
9	Name the protocol that is used to send emails.	1
10	Write a statement in Python to open a text file WRITEUP.TXT so that new content can be written in it.	1
11	In SQL, name the clause that is used to display the tuples in ascending order of an attribute.	1
12	In SQL, what is the use of IS NULL operator?	1
13	Write any one aggregate function used in SQL.	1
14	Which of the following is a DDL command? a) SELECT b) ALTER c) INSERT d) UPDATE	1
15	Name the transmission media best suitable for connecting to hilly areas.	1
16	Identify the valid declaration of L: L= ['Mon', '23', 'hello', '60.5'] a. dictionary b. string c. tuple d. list	1
17	If the following code is executed, what will be the output of the following code? name="KVS RO Jammu" print(name[4:-2])	1
18	In SQL, write the query to display the list of tables stored in a database.	1
19	Write the expanded form of RFID.	1
20	Which of the following types of table constraints will prevent the entry of duplicate rows? a) Unique b) Distinct c) Primary Key d) NULL	1
21	Which of the following units measures the speed with which data can be transmitted from one node to another node of a network? (i) KMph (ii) KMpl (iii) Mbps	1

## SECTION –II

**Both the Case study based questions are compulsory. Attempt any 4 sub parts from each question. Each question carries 1 mark**

22. A store MySports is considering to maintain their inventory using SQL to store the data. The detail is as follow:

- Name of the database – MySports
- Name of the table – Sports
- The attributes of SPORTS are as follows:
  - SCode – character
  - SportName – character of size 20
  - Noofplayers – numeric
  - coachname – character of size 20

Table: SPORTS

SCode	SportName	Noofplayers	Coachname
S001	Cricket	21	Rahul Dravid
S002	Football	25	Roshan Lal
S003	Hockey	40	Sardar Singh
S004	Cricket	19	Chetan Sharma
S005	Archery	12	Limbaram
S006	Shooting	17	Deepika Kumari

a. Identify the attribute best suitable to be declared as a primary key

1

b. Write the degree and cardinality of the SPORTS table

1

c. Insert the following data into the attributes SCode, SportName and Coachname respectively in the given table SPORTS. SCode = S007, SportName = “Kabbadi” and Noofplayers = 15

1

d. Someone wants to delete the column coachname. Which command will he use from the following:

1

- i) DELETE Coachname FROM SPORTS;
- ii) ALTER Coachname FROM SPORTS
- iii) ALTER TABLE SPORTS DROP Coachname
- iv) DELETE Coachname FROM SPORTS

e. Write the command to delete the structure of the table

1

23	<p>Pushpa writing a program to create a CSV file "item.csv" which will contain item name, Price and quantity of some entries. He has written the following code. As a programmer, help him to successfully execute the given task.</p> <pre> import _____ # Line 1 def addInCsv(item,price,qty): # to write / add data into the CSV file     f=open(' item.csv',' _____ ') # Line 2     csvFileWriter = csv.writer(f)     csvFileWriter.writerow([item,price,qty])     f.close() #csv file reading code def readFromCsv(): # to read data from CSV file     with open(' item.csv','r') as csvFile:         newFileReader = csv. _____ ( csvFile) # Line 3         for row in newFileReader:             print (row[0],row[1],row[2])             csvFile. _____ # Line 4 addInCsv('Note Book', 45, 100) addInCsv('Text Book', 60, 150) addInCsv('Ball Pen', 10, 100) addInCsv('Pencil', 5, 200) readFromCsv() #Line 5 </pre>	
	(a) Name the module he should import in Line 1.	1
	(b) In which mode, Pushpa should open the file to add data into the file	1
	(c) Fill in the blank in Line 3 to read the data from a csv file.	1
	(d) Fill in the blank in Line 4 to close the file.	1
	(e) Write the output he will obtain while executing Line 5.	1
	<b>Part - B</b>	
	<b>Section-I</b>	
24	<p>Evaluate the following expressions:</p> <p>a) <math>6 * 3 + 4 ** 2 // 5 - 8</math></p> <p>b) <math>10 &gt; 5</math> and <math>7 &gt; 12</math> or not <math>18 &gt; 3</math></p>	2
25	<p>What is the difference between hub and switch? Which is more preferable in a large network of computers and why?</p> <p style="text-align: center;">OR</p> <p>Differentiate between WAN and MAN. Also give a n example of WAN.</p>	2
26	<p>Expand the following terms:</p> <p>a. SMTP b. XML c. LAN d. HTTPS</p>	2
27	<p>Differentiate between global and local variables with a suitable example for each.</p> <p style="text-align: center;">OR</p> <p>Explain the significance of return statement word used in a function with the help of a suitable example.</p>	2
28	<p>Rewrite the following code in Python after removing all syntax error(s). <b>Underline each correction done in the code.</b></p>	2



**Section- II**

34 Write a python Function that accepts a string and calculates the number of uppercase letters and lowercase letters.  
 Sample String : Python ProgrammiNg  
 Expected Output:  
 Original String : Python ProgrammiNg  
 No. of Upper case characters : 3  
 No. of Lower case characters :14

35 Write a Python program to find the number of words in a text file.  
 OR  
 Write a Python program to count all the line having 'a' as last character

36 Write the outputs of the SQL queries (i) to (iii) based on the relations Teacher and Posting given below:

Table : Teacher

T_ID	Name	Age	Department	Date_ofJoin	Salary	Gender
1	Jatin	34	Computer Sc	10/01/2017	12000	M
2	Sita	31	History	24/03/2008	20000	F
3	Sandy	32	Mathematics	12/12/2016	30000	M
4	Smriti	35	History	01/07/2015	40000	F
5	Ravi	42	Mathematics	05/09/2007	25000	M
6	Sunny	50	History	27/06/2008	30000	M
7	Suresh	44	Computer Sc	25/02/2017	21000	M
8	Sunaina	33	Mathematics	31/07/2018	20000	F

Posting given below:

P_ID	Department	Place
1	History	Agra
2	Mathematics	Raipur
3	Computer Science	Gurgaon

- i. SELECT Department, count(\*) FROM Teacher GROUP BY Department;
- ii. SELECT Max(Date\_of\_Join),Min(Date\_of\_Join) FROM Teacher;
- iii. SELECT Teacher.name,Teacher.Department, Posting. Place FROM Teacher, Posting WHERE Teacher.Department = Posting.Department AND Posting.Place="Gurgaon";

37 Write a function in Python Push(Arr, value), where Arr is a list of Strings. From this list push all the Strings starting with "a" or "g" into a stack

implemented by using a list. Display the stack if it has at least one element, otherwise display appropriate error message.

OR

Write a function in Python, Pop(Arr), where Arr is a stack implemented by a list of numbers. The function should return the value deleted from the Stack only if it is a multiple of 6.

**SECTION- III**

38 Vidya Senior Secondary Public School in Nainital is setting up the network between its different wings. There are 4 wings named as SENIOR(S), JUNIOR(J), ADMIN(A) and HOSTEL(H). 5

Distance between various wings are given below:

Wing A to Wing S	100 m
Wing A to Wing J	200 m
Wing A to Wing H	400 m
Wing S to Wing J	300 m
Wing S to Wing H	100 m
Wing J to Wing H	450 m

Wing	Number of Computers
Wing A	20
Wing S	150
Wing J	50
Wing H	25

1. Suggest a suitable Topology for networking the computers of all wings.
2. Name the most suitable wing where the Server should be installed. Justify your answer.
3. Suggest where all should Hub(s)/Switch(es) be placed in the network.
4. Which communication medium would you suggest to connect this school with its main branch in Delhi ?
5. What is router ?

39 Consider the following tables Sender and Recipient. Write SQL commands for the statements (a) to (c) and give the outputs for SQL queries (d) to (e). 5

**Sender**

SenderID	SenderName	SenderAddress	Sendercity
ND01	R Jain	2, ABC Appls	New Delhi
MU02	H Sinha	12 Newtown	Mumbai
MU15	S Jha	27/A, Park	Mumbai
ND50	T Prasad	122-K,SDA	New Delhi

**Recipients**

RecI	SenderI	RecName	RecAddress	recCity
KO0	ND01	R Jain	5, Central Avenue	Kolkata
ND0	MU02	H Sinha	116, A-Vihar	New Delhi
MU1	ND01	H Singh	2A, Andheri East	Mumbai
MU3	MU15	P K	B5, C S Terminals	Mumbai
ND4	ND50	S Tripathi	13, BI D Mayur	New delhi

	<p>a. To display the RecID, Sendername, SenderAddress, RecName, RecAddress for every Recipient</p> <p>b. To display Recipient details in ascending order of RecName</p> <p>c. To display number of Recipients from each city</p> <p>d. SELECT A.SenderName, B.RecName From Sender A, Recipient B Where A.SenderID = B.SenderID AND B.RecCity = 'Mumbai';</p> <p>e. SELECT RecName, RecAddress From Recipient Where RecCity NOT IN ('Mumbai', 'Kolkata');</p>	
40	<p>A binary file "Book.dat" has structure <b>[BookNo, Book_Name, Author, Price]</b>.</p> <p>i. Write a user defined function <b>CreateFile()</b> to input data for a record and add to Book.dat.</p> <p>ii. Write a function <b>CountRec(Author)</b> in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat"</p> <p style="text-align: center;">OR</p> <p>A binary file "STUDENT.DAT" has structure (admission_number, Name, Percentage). Write a function <b>countrec()</b> in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%.</p>	5

a. To display the RecID, Sendername, SenderAddress, RecName, RecAddress for every Recipient  
 b. To display Recipient details in ascending order of RecName  
 c. To display number of Recipients from each city  
 d. SELECT A.SenderName, B.RecName From Sender A, Recipient B Where A.SenderID = B.SenderID AND B.RecCity = 'Mumbai';  
 e. SELECT RecName, RecAddress From Recipient Where RecCity NOT IN ('Mumbai', 'Kolkata');

A binary file "Book.dat" has structure **[BookNo, Book\_Name, Author, Price]**.  
 i. Write a user defined function **CreateFile()** to input data for a record and add to Book.dat.  
 ii. Write a function **CountRec(Author)** in Python which accepts the Author name as parameter and count and return number of books by the given Author are stored in the binary file "Book.dat"

OR

A binary file "STUDENT.DAT" has structure (admission\_number, Name, Percentage). Write a function **countrec()** in Python that would read contents of the file "STUDENT.DAT" and display the details of those students whose percentage is above 75. Also display number of students scoring above 75%.