

Q3	<p>(a) Write a Python program to input a line of text and a character from user to print the frequency of the character in the line. For example Line entered is : this is a golden pen The character to search : e Then output is : Frequency is 2</p> <p style="text-align: center;">OR</p> <p>Find the output of the following Python Code: t=(10,20,30,40,50,60,70,20,30,50) >>> print (t) >>> print (max(t)) >>> print (t.count(20)) >>> print (t[0]+5) >>> print (t.index(40)) >>> print (min(t) + len(t))</p>	3
	<p>(b) Create the following lists using a for loop: (i) A list containing of the integers 0 through 49. (ii) A list containing squares of the integers 1 through 50.</p> <p style="text-align: center;">OR</p> <p>Find the output of the following code: >>> L=["These", "are", "a", ["few", "words"], "that", "we", "will", "use"] >>> print (L[3:4]) >>> print (L[3:4][0][1]) >>> print (L[3:4][0][1][2]) >>> print ("few" in L) >>> print ("few" in L[3]) >>> print (L[0::2]) >>> print (L[4:]) >>> print (L)</p>	4
	<p>(c) Write a Python Program to input a string to check whether it is a Palindrome string or not. (A Palindrome string is that which is same from both ends like - NITIN, MALAYALAM, PULLUP)</p> <p style="text-align: center;">OR</p> <p>Write a Python Program to input a number from user to check and print whether it is a PRIME number or not. (Example of some prime numbers are 2, 3, 5, 11, 13 etc)</p>	3
Q.4	<p>Answer the Questions.</p> <p>(a) Find the output of the following Python Code: >>> L1=[10,20,30] >>> L2=[110, 220, 330] >>> L3=L1+L2 >>> L4=L3[0:4] >>> print (L4) >>> L4[0]=L4[0]*10 >>> L4[2]=L4[1]*5 >>> L4[1]=L4[2] >>> L4[3]=L4[3] - 10 >>> print (L4)</p> <p style="text-align: center;">OR</p> <p>Write a program to input radius of a circle to find and print its area and circumference.</p> <p>(b) Reduce the following expression using Boolean laws (Mention the law used): $F = CD' + A + A + C'D' + AB$</p>	2

OR

Which gates are known as 'Universal Gates' and why? Design AND gate using any of the Universal Gate.

(c) (i) Suppose a list is L=[2, 33, "KVS", 14, 25], what is L[-3]?
 (ii) Write a Python statement to print the string "India" 10 times. 2

OR

Write a Python program using while loop that inputs a number from user and print a countdown from that number to zero.

(d) What is the difference between break and continue statement in Python? Explain giving suitable example. 3

OR

Write a Python program using for loop to display the following pattern:

```
*****
****
***
**
*
```

(e) Name the Boolean law: $X + XY = X$ and verify using Truth Table. 1

OR

What is Cloud Computing?

Q.5 (a) What do you mean by a 'PRIMARY KEY' in context of a table? 1

(b) Explain Degree and Cardinality with example. 1

(c) Differentiate between DDL and DML Commands.
 Identify DDL and DML commands from the following commands 2

- (i) Update
- (ii) Select
- (iii) Alter
- (iv) Drop

(d) Consider the following Patient table and write SQL queries for the given questions:
 Table: PATIENT 3

PID	PatName	Regis_Date	Gender
P501	Krisla Singh	2017-02-24	Female
P502	Ritesh Kumar	2017-02-28	Male
P503	Harshvardhan Sharma	2018-05-01	Male
P504	Bhavna Agarwal	2018-08-05	Female
P505	Aryan Yadav	2018-08-17	Male
P506	Swatantra Singh	2018-10-03	Male
P507	Alankar Srivastava	2018-11-14	Male

- (i) To print details of all Male patients
- (ii) To display the Patient Name of all patients whose name ends with "Singh"
- (iii) To print details of all patients who registered in year 2017.

(e) What do you understand by NoSQL databases? Explain giving example of it. 1

(f) A table Student in a database has 7 columns and 52 records. What is its degree and cardinality, if 7 2

records are updated and 1 column is added into the table?

Q6 (a) What is the difference between `islower()` and `lower()` in context of string in Python? Explain giving proper example. 2

(b) What is the difference between RAM and ROM? 2

(c) Write MySQL command to create the Table STOCK including its constraints and insert one record in it. 2

Table : STOCK

Name of Column	Type	Size	Constraint
Id	Integer	4	Primary Key
Name	Varchar	20	Not Null
Company	Varchar	20	
Price	Integer	8	Not Null

(d) Consider the following table TEACHERS and then write SQL for the given questions (i) and (ii), then also write the output of (iii) and (iv): 3

TID	NAME	AGE	DEPARTMENT	DATEOFJOIN	SALARY	SEX
1	JUGAL	34	COMPUTER	10/01/97	12000	M
2	PRATIGYA	31	HISTORY	24/03/98	20000	F
3	SANDEEP	32	MATHS	12/02/96	30000	M
4	SANGEETA	35	HISTORY	01/07/99	40000	F
5	SATTI	42	MATHS	05/09/97	25000	M
6	SHYAM	50	HISTORY	27/06/98	30000	M
7	SHIV OM	44	COMPUTER	25/02/97	21000	M
8	SHALAKHA	33	MATHS	31/07/97	20000	F

- (i) To print the names of all Male teachers of computer department.
- (ii) To find out sum of salary of all the departments separately.

Write output for the following SQLs

- (iii) Select TID, NAME, DEPARTMENT from TEACHERS where name like "SA%" and department="maths" and age<=35;
- (iv) Select TID, NAME, SALARY from TEACHERS where year(DATEOFJOIN)=97 and salary between 20000 and 30000;

(e) Differentiate between a compiler and an interpreter. 1

Q.7 (a) What do you mean by Cyber Safety? 1

(b) What do you understand by Identity Theft? 1

(c) What do you mean by Cookies? 1

(d) What do you mean by Social Networking Sites? Give some examples. 1

(e) What do you mean by virus? What is anti-virus software? 2

(f) Define the following terms: (i) Eavesdropping (ii) Phishing 2

(g) What are different types of threats to computer security? 2