

General Instruction:

1. This question paper contains five sections, Section A to E.
2. All questions are compulsory.
3. Section A have 18 questions carrying 01 mark each.
4. Section B has 07 Very Short Answer type questions carrying 02 marks each. Mention examples for each selected question.
5. Section C has 05 Short Answer type questions carrying 03 marks each.
6. Section D has 02 questions carrying 04 marks each.
7. Section E has 03 questions carrying 05 marks each.

All programming questions are to be answered using Python Language only

SECTION A – 18 MARKS

- Q1.** Consider the given list: `L=['Delhi','Mumbai','Kolkata','Chennai']`, What `L[3:2]` returns? 1
- a. Empty List b. ['Chennai','Kolkata']
c. ['Chennai'] d. ['Kolkata','Chennai']
- Q2.** Consider the given dictionary? 1
`d={'Ahmedabad':'Gujarat','Mumbai':'Maharashtra','Indore':'Madhya Pradesh'}` What will be the output of `print(d.get('Indore'))`
- a. Error b. Madhya Pradesh
c. 2 d. Indore
- Q3.** Which for loop statement will produce first 5 odd numbers: 1
- a) for x in range(1,9,2): b) for x in range(1,10,2):
c) for x in range(9, 1, -2): d) None of these
- Q4.** Write output of the expression, `3 % 22` : 1
a) 3 b) 7.3 c) 22 d) None of these
- Q5.** What is the output of the following code: 1
`L='123456'`
`L=list(L)`
`print(type(L[0]))`
- a. class 'int' b. class 'str'
c. 1 d. Error
- Q6.** Which statement is not correct in reference to the following code? 1
`A={1: 'One',2:'Two',3:'Three'}`
`A[4]='Four'`
- a. It will add value at the end of the dictionary b. It will modify value if the key already exist
c. It will add value in between of the dictionary d. All the above

- Q7.** What will be the output of the following Python code snippet? 1
d = {"john":40, "peter":45}
print(list(d.keys()))
a) ["john", "peter"] b) [{"john":40, "peter":45}]
c) ("john", "peter") d) ("john":40, "peter":45)
- Q8.** What will be the output of the following Python code? 1
a=[13,56,17]
a.append([87])
a.extend([45,67])
print(a)
a) [13, 56, 17, [87], 45, 67] b) [13, 56, 17, 87, 45, 67]
c) [13, 56, 17, 87,[45, 67]] d) [13, 56, 17, [87], [45, 67]]
- Q9.** Which of the following is not correct about data type in MySQL? 1
a. Data type indicates the type of data value that an attribute can have.
b. The data type of an attribute decides the operations that can be performed on the data of that attribute.
c. Arithmetic operations can be performed on numeric data but not on character data.
d. Data type of at least two attribute in a table should be same.
- Q10.** Char(n) Specifies character type data of length n where n could be any value 1
from _____
a. 0 to 254 b. 0 to 256 c. 0 to 255 d. 0 to 257
- Q11.** _____ are certain types of restrictions on the data values that an attribute can 1
have.
a. Data type b. Constraints c. Data Consistency d. Data Redundancy
- Q12.** Candidate key – Primary key = _____ 1
a. Alternate Key b. Foreign Key c. Candidate Key d. Primary Key
- Q13.** Suppose the principal of the school has decided to award scholarship to some 1
needy students for which income of the guardian must be known. But school
has not maintained income attribute with table GUARDIAN so far. Therefore,
the database designer now needs to add a new attribute 'income' of data type
INT in the table GUARDIAN.
a. Alter table GUARDIAN add attribute income INT;
b. Update table GUARDIAN add income INT;
c. Alter table GUARDIAN add income INT;
d. Modify table GUARDIAN add income INT;
- Q14.** We can use _____ statement to remove a database permanently from the 1
system.
a. Remove b. Delete c. Drop d. Cut

Q15. Amit has written the following query in MySQL to insert a record in table 'Student' which has degree 6. Read this query carefully and tell that how many NULL values will be inserted in this record?
Insert into student (Rollno, Name, Class, Section) Values (1, NULL, 'X', 'A'); 1

Q16. Can we insert two records with the same roll number? Identify the most appropriate option from the following. 1
a. Yes, we can if roll number is not a primary key.
b. No, we can not
c. Yes we can if roll number is a primary key.
d. No, we can not if roll number is not a primary key

Q17 and 18 are **ASSERTION AND REASONING** based questions. Mark the correct choice as

- A. Both A and R are true and R is the correct explanation for A**
B. Both A and R are true and R is not the correct explanation for A
C. A is True but R is False
D. A is false but R is True

Q17. Assertion: A database constraint can be added or removed any time from database tables. 1

Reasoning: Alter table command is used to change the structure of table.

Q18. Assertion: SQL has efficient mechanisms to retrieve data stored in multiple tables in a MySQL database. 1

Reasoning: The SQL statements CREATE is used to retrieve data from the tables in a database and is also called query statement

SECTION B – 14 MARKS

Q19. Write a program in Python which consider any list of numbers and converts all the odd numbers in the list to even by adding 1. 2

OR

Write a program in Python which consider any list of numbers and multiply only those numbers which are multiplies of 7

Q20. Harmin joined a school as front office executive. The school management has given him the task to convert two excel worksheets STUDENT and ATTENDANCE into a table and creates the relationship among them. The files contain following structure. 2

Student	Attendance
Rno – To store roll no. of student	Att_date – Date of attendance
Sname – name of student	Rno – Roll no. of student
Dob – date of birth	Sname – name of student
Guardian – Guardian name	Status – present or absent

What changes Harmin has to do to convert these files into tables?

Q21. Define the following: i. Attribute ii. Cardinality 2

Q22. Differentiate between primary key and foreign key. 2

OR

Differentiate between delete and drop command.

Q23. Kunal is working as Database Administrator in 5-star data solutions pvt. Ltd. He wants to do the following, suggest him SQL commands to accomplish his task: 2

- i. He wants list all the table names present in a database.
- ii. He wants to change the salary of employees in emp table

Q24. Write a program in Python which considers any dictionary. Accept key from user and remove that key from the dictionary if present. 2

Q25. Find the error of the following code: 2

```
x= int("Enter value of x:")
```

```
for in range [0,10]:
```

```
    if x=y
```

```
        print( x + y)
```

```
    else:
```

```
Print( x-y)
```

SECTION C – 15 MARKS

Q26. Observe the following table and write answers for the below given questions: 3
Table Name: **Movie**

Movie_Id	Movie_Name	Category	ReleaseDate	Director
M0001	Gandhi Godse	History	2023-01-26	Rajkumar Santoshi
M0002	Faraaz	Action	2023-02-23	Hansal Mehta
M0003	Shehzada	Drama	2023-02-10	Rohit Dhawan

- i) Write command to drop primary key from the movie table
- ii) Write command to rename column ReleaseDate to release_date
- iii) Write command to delete table Movie

Q27. What is default constraint? How to apply default constraint using create table command and alter table command? 3

Q28. Give the terms used for the following: 3

- i. Collection of logically related records
- ii. A file having description about data stored into the database
- iii. A special value that can be used to hold unknown values
- iv. A field which can identifies distinct records but not a primary key
- v. A constraint that does not allow to leave any blank cell in table
- vi. Name any data models that is used most commonly

Q29. Write a program in Python which consider any list of numbers and create two new different list that contains unique and duplicates number. 3

Example: list is [5,8,6,2,5,3,4,5,2,3,7,9]

Unique list: [8,6,4,7,9]

Duplicates list:[2,5,3]

OR

Write a program that checks if two same values in a dictionary have different keys. That is, for dictionary D1 = { 'a' : 10, 'b': 20, 'c' : 10}, the program should print 2 keys have same values and for dictionary D2 = { 'a' : 10, 'b' : 20, 'c' : 30} , the program should print No keys have same values.

- Q30.** Consider the following list, p = ['v', 'a', 'c', 'c', 'i', 'n', 'a', 't', 'i', 'o', 'n']. 3
Write a program to display each character along with its frequency of occurrence, and also excluding duplicates from displaying multiple times.

SECTION D – 8 MARKS

- Q31.** a. Write a python program to find the maximum marks and minimum marks from given dictionary and print the difference between them. 4
[2+2]
Dictionary is as:
student={'Henil':78,'Kartvya':82,'Avee':93,'Dhruvin':88,'Shaan':94}
b. Write a python code to print factorial of any number

OR

- a. Write a program which consider any list of numbers remove odd numbers from an list
Example: lst=[478,596,121,555,321]
Final list: [478,596] (after changes)
b. Write a program in Python which takes any two lists and check whether both the lists are equal or not.

- Q32.** Consider the table EMP_TBL and answer the following:

4

Ecode	ENAME	Dept	Salary
101	Gautam Gupta	Sales	55000
102	Nina Sharma	Marketing	62000
103	Venkat	HR	75000
104	Karan Kumar	Sales	45000
105	Asha Yadav	HR	72000

Write query for the following (i) to (iv):

- Write query to display the names of employees whose salary is between 50000 and 70000.
- Write query to display the name and salary of employees of sales department.
- Arrange the employee details based on salary in descending order.
- Remove the details of employee whose name ends with 'a'

SECTION E – 15 MARKS

- Q33.** a) What is the use of foreign key? Illustrate your answer with example. 5
b) Consider the below given table and write queries for (i) to (vi): [2+3]

Table Name: Pet

Name	Owner	Species	Gender	Age
------	-------	---------	--------	-----

Monty	Aditya	Dog	M	4
Badal	Dev	Horse	M	4
Moti	Motisingh	Dog	M	3
Mittu	Harsh	Parrot	M	2
Pinky	Kartvya	Cat	F	1
Sweety	Vyas	Cat	F	2

- Display all the details of pet in alphabetical order of names
- Display Name, owner and age of all pets whose age is 2 to 4 years
- Increase the age of all pets by 1 year
- Delete all details of female pets
- Insert a new record : ('Rosy', 'Rajveer', 'Dog', 'F', 2)
- Arrange all details of pet descending order of Age

- Q34.** a. Consider the table FLIGHT given below. Write commands in SQL for (i) 5
to (iii) [3+2]

Table : FLIGHT

FLCODE	START	DESTINATION	NO_STOPS	NO_FLIGHTS
IC101	DELHI	AGARTALA	1	5
IC102	MUMBAI	SIKKIM	1	3
IC103	DELHI	JAIPUR	0	7
IC105	KANPUR	CHENNAI	2	2
IC107	MUMBAI	KANPUR	0	4
IC431	INDORE	CHENNAI	3	2
IC121	DELHI	AHMEDABAD	2	6

- Display details of all flights starting from Delhi.
- Display details of flights that have more than 4 number of flights operating.
- Display flight codes, starting place, destination, number of flights in descending order of number of flights.

- b. Write MySql command to create the table SHOP with given structure

Column_Name	Data Type(size)	Constraint
Fno	Int(10)	Primary key
Fname	Varchar(15)	
Type	Char(10)	
Stock	Int(3)	
Price	Decimal(8,2)	

- Q35.** a. Write a program which consider any number and check whether a given number is lead number or not. 5
(It is a number in which the sum of even digits is equal to the sum of the odd digits) [3+2]

- b. Write a program in Python which consider any list of numbers and find the largest number among all the numbers without using max() inbuilt function.

OR

- a. Write a program which consider any number and check whether a given number is Neon Number or not.

(A positive integer whose sum of digits of its square is equal to the number itself is called a neon number)

- b. Write a python program to join/merge/concatenate the following two directions and create the new dictionary.

D1={1:'Aman',2:'Suman'}

D2={4:'Ravi',5:'Kamal'}