Previous Years' Paper

Common University Entrance Test for UG Programmes

CUET-UG – Computer Science

Entrance Exam, 2025

(After the list of questions, the solution will Start.)

Q.1. Identify the relational algebra operation denoted by:

Course X Student;

where 'Course' and 'Student' are two relations and X is an operation.

1. Union

2. Set Difference

3. Cartesian Product

4. Intersection

Q.2. Given:

TableA:

Name	Hobbies
Anu	Dance
Anuj	Music

TableB:

Name	Hobbies
Prannav	Reading
Anuj	Reading

Find TableA U TableB?

1.

Name	Hobbies
Anu	Dance
Anuj	Music
Prannav	Reading

2.

Name	Hobbies
Anuj	Music
Prannav	Reading

3.

Name	Hobbies
Prannav	Reading

4.

Name	Hobbies
Anu	Music
Anuj	Dance
Prannav	Reading

Q.3. Given two relations:

'Employee' with structure as ID, name, Address, Phone, Deptno

Department witn structure as Deptno, Dname

_____ is used to represent the relationship between two relations Employee and Department.

1. Primary key

2. Alternate key

3. Foreign key

4. Candidate key

Q.4. A value is specified for the column, if no value is provided.

1. unique

2. null

3. default

4. primary

Q.5. Given table 'StudAtt' with structure as Rno, Attdate, Attendance.

Identify the suitable command to addaprimary key to the table after table creation.

Note: In the given case, we want to make both Rno and Attdate columns as primary key.

1. ALTER TABLE StudAtt ADD PRIMARY KEY(Rno, Attdate);

2. CREATE TABLE StudAtt ADD PRIMARY KEY(Rno);

3. ALTER TABLE StudAtt ADD PRIMARY KEY;

4. ALTER TABLE StudAtt ADD PRIMARY KEY(Rno) AND PRIMARY KEY(Attdate);

Q.6. The SELECT command when combined with DISTINCT clause is used to:

1. returns records without repetition

2. returns records with repetition

3. returns all records with conditions

4. returns all records without checking

Q.7. _____ is used to search for a specific pattern inacolumn.

1. Between operator

2. In operator

3. Like operator

4. Null operator

Q.8. Give the output of the query:-

SELECT MONTH("2010-03-05");

1. 3

2. 5

3. MARCH

4. MAY

Q.9. Match List-I with List-II

List-1 (Aggregate function)	List-I1 (Description)
(A) count(marks)	(I) Count all rows
(B) count(*)	(II) Finding average of non null values of marks
(C) avg(marks)	(III) Count all non null values of marks column
(D) sum(marks)	(IV) Finding sum of all marks

Chooco the correct answer from the options given below

1. (A) - (III), (B) - (I), (C) - (II), (D) - (IV)

2. (A) - (I), (B) - (III), (C) – (II), (D) - (IV)

3. (A) - (I), (B) - (II), (C) – (IV), (D), - (III)

4. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Q.10. Given Relation: 'STUDENT'

S.NO	SNAME	MARKS
1	Amit	20
2	Karuna	40
3	Kavita	NULL
4	Anuj	30

Find the value of:

SELECT AVG(MARKS) FROM STUDENT;

1. 30

2. 22.5

3. 90

4. 23

Q.11. _____ operation is used to get the common tuples from two relations.

1. Union

2. Intersect

3. Set Difference

4. Cartesian product

Q.12. Identify the correct IP address from the options given:

1. FC:F8:AE:CE:7B:16

2. 192.168.256.178

3. 192.168.0.178

4.192.168.0.-1

Q.13. Arrange the following python code segments in order with respect to exception handling.

(A) except ZeroDivisionError:

print("Zero denominator not allowed")

(B) finally:

print("Over and Out")

(C) try:

n=50

d=int(input("enter denominator")

d/n=q

print("division performed")

(D) else:

print("Result=",q)

Choose the correct answer from the options given below:

1. (C), (A), (B), (D)

2. (C), (A), (D), (B)

3. (B), (A), (D), (C)

4. (C), (B), (D), (A)

Q.14. _____ is the process of transforming data or an object in memory (RAM) to a stream of bytes called byte streams.

1. read()

2. write()

3. Pickling

4. De-serialization

Q.15. Identify the correct code to read data from the file notes.dat in a binary file:

1. import pickle f1=open("notes.dat","r")

data=pickle.load(f1)

print(data)

f1.close()

2. import pickle f1=open("notes.dat","rb")

data=f1.load()

print(data)

f1.closen

3. import pickle f1=open("notes.dat","rb")

data=pickle.load(f1)

print(data)
f1.close()

4. import pickle f1=open("notes.dat", "rb")

data=f1.read()

print(data)

f1.close()

Q.16. Identify the correct python statement to open a text file "data.txt" in both read and write mode.

1. file.open("data.txt")

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

3. file.open("data.txt"."rw")

4. file.open("data.txt","rw+")

Q.17. Identify the type of expression where operators are placed before the corresponding operands:

1. Polish expression

2. Infix expression

3. Postfix expression

4. Reverse polish expression

Q.18. Evaluate the postfix expression:

24 5 7* 5 / +

1. 29

2. 30

3. 31

4. 0

Q.19. STACK follows _____ principle, where insertion and deletion is from end/ends only.

1. LIFO, two

2. FIFO, two

3. HFO, top

4. LIFO, one

Q.20. Given a scenario:

Suppose there is a web-server hosting a website to declare results. This server can handle a maximum of 100 concurrent requests to view results, So, as to serve thousands of user reguests. a _____ would be the most appropriate data structure to use.

1. Stack

2. Queue

3. List

4. Dictionary

Q.21. To perform enqueue and dequeue efficiently on a queue, which of the following operations are required?

A) isEmpty

B) peek

C) isfull

D) update

Choose the correct answer from the options given below:

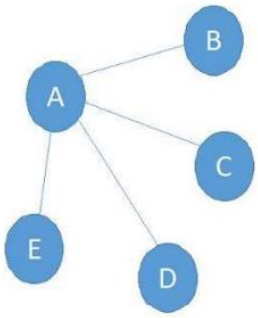
1. (A), (B) and (D) only

2. (A), (B) and (C) only

3. (B) (C) and (D) only

4. (A), (C) and (D) only

Q.22.



Distance table:

A to B	20 mtr.
A to C	50 mtr.
A to D	110 mtr.
A to E	/0 mtr.

Identify the correct place where we have to use repeaters.

1. Between A to B

2. Between A to C

3. Between A to D

4. Between A to E

Q.23. In MAC address, Organisational Unique Identifier (OUI) consist of _____.

1. 32 bits

2. 48 bits

3. 24 bits

4. 64 bits

Q.24. Given a list numList of n elements and key value K, arrange the following steps for finding the position of the key K in the numList using binary search algorithm i.e. BinarySearch(numList, key)

(A) Calculate mid = (first+last)//2

(B) SET first = 0, last = n-1

(C) PRINT "Search unsuccessful"

(C) PRINT "Search unsuccessful"

IF numList[mid] = key DRIIT "Flemept found at position" mid+1

STOP

ELSE

IF numList[mid] > key, THEN last = mid-1

EL SE first = mid + 1

Choose the correct answer from the options given below:

1. (A), (B), (D), (C)

2. (D), (B), (A), (C)

3. (B), (A), (D), (C)

4. (D), (A), (B), (C)

Q.25. In binary search after every pass of the algorithm, the search area:

1. gets doubled

2. gets reduced by half

3. remains same

4. gets reduced by one third

Q.26. For binary search, the list is in ascending order and the key is present in the list. If the middle element is less than the key, it means:

1. The key is in the first half.

2. The key is in the second half.

3. The key is not in the list.

4. The key is the middle element.

Q.27. Arrange the following in order related to bubble sort for a list of elements:

4	-9	12	30	2	6

(A)

-9	4	12	30	2	6

(B)

-9	4	12	2	30	6

(C)

-9	4	2	12	6	30

(D)

-9	4	12	2	6	30

Choose the correct answer from the options given below:

1. (A), (B), (D), (C)

2. (A), (C), (B), (D)

3. (B), (A), (D), (C)

4. (C), (B), (D), (A)

Q.28. The amount of time an algorithm takes to process a given data can be called its:

1. Process time

2. Time period

3. Time complexity

4. Time bound

Q.29. Identify the incorrect statement in the context of measures of variability:

1. Range is the difference between maximum and minimum values of the data.

2. Mean is the average of numeric values of an attribute.

3. Standard deviation refers to differences within the set of data of a variable.

4. Measures of variability is also known as measures of dispersion.

Q.30. Identify type of data being collected/generated in the scenerio of recording a video:

1. Structured Data

2. Ambiguous data

3. Unstructured data

4. Formal Data

Q.31. Given data:

Weight of 20 student in kgs=[35, 35, 40, 40, 40, 50, 50, 50, 50, 50, 60, 65, 65, 70, 70, 72, 75, 75, 78, 78]

Find the mode.

1. 50

2. 55

3. 57.4

4. 57

Q.32. Match List-I with List-II

List-1	List-II
(A). Primary key	I). Total number of attributes in a table.
(B). Degree	(II). Attribute used to relate two tables.
(C). Foreign key	(III). Attribute used to uniquely identify a tuple.
(D) Copotroint	(IV) A resriction on the Type of datoa that Can be inserted in a column of a table.

Choose the correct answer from the options given below:

1. (A) - (1), (B) - (II), (C) - (III), (D) - (IV)

2. (A) - (III), (B) - (1), (C) - (II), (D) - (IV)

3. (A) - (1), (B) - (II), (C) - (IV), (D) - (I1I)

4. (A) - (III), (B) - (IV), (C) - (1), (D) - (11)

Q.33. In SQL table, the set of values which a column can take in each row is called _____ .

1. Tuple

2. Attribute

3. Domain

4. Relation

Q.34. Which of the following is synonym for Meta - data?

1. Data Dictionary

2. Database Instance

3. Database Schema

4. Data Constraint

Q.35. Single row functions are also known as _____ functions.

1. Multi row

2. Group

3. Mathematical

4. Scalar

Q.36. Ms Ritika wants to delete the table 'sports' permanently. Help her in selecting the correct SQL command from the following.

1. DELETE FROM SPORTS;

2. DROP SPORTS;

3. DROP TABLE SPORTS;

4. DELETE* FROM SPORTS;

Q.37. Which of the following are text functions?

(A) MIDO

(B) INSTRO

(C) SUBSTRO

(D) LENGTH)

Choose the correct answer from the options given below:

1. (A), (B) and (D) only

2. (A), (B) and (C) only

3. (A), (B), (C) and (D)

4. (B), (C) and (D) only

Q.38. Match List-I with List-II

List-I	List-II
(A) ROUTER	(1) NETWORK TOPOLOGY
(B) ETHERNET CARD	(I1) NETWORK DEVICE
(C).RING	(III) NETWORK TYPE
(D) PAN	(IV) NETWORK INTERFACE CARD

Choose the correctanswer from the options given below:

1. (A) - (11), (B) - (IV), (C) - (1), (D) - (III)

2. (A) - (1), (B) - (III), (C) - (II), (D) - (IV)

3. (A) - (IV), (B) - (II), (C) - (II), (D) - (I)

4. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Q.39. _____ is a language used to design web pages.

1. Web browser

2. HTTP

3. HTML

4. WWW

Q.40. Match List-I with List-II

List-1	List-I1
(A) Modem	(1) An eight pin connector used with Ethernet cables for networking.
(B) RJ45	(II) Modulator-Demodulator
(C) Network interface unit	(III) An organization that provides services for accessing the internet.
(D) ISP	(IV) Ethernet card

Choose the correct answer from the options given below:

1. (A) - (I), (B) - (II), (C) - (III), (D) - (IV)

2. (A) - (I), (B) - (I), (C) - (IV), (D) - (D)

3. (A) - (I), (B) - (II), (C) - (IV), (D) - (III)

4. (A) - (II), (B) - (IV), (C) - (I), (D) - (III)

Q.41. Bandwidth of a channel is:

1. The range of frequencies available for transmission of data through that channel.

2. The path of message travels between source and destination.

3. The set of rules on the Internet.

4. I he data or inrormation that heeds to be exchanged.

Q.42. Data Transfer Rate 1 Gbps is equal to:

(A) 1024 Mbps

(B) 1024 Kbps

(C) 2^{30} bps

(D) 22 bps

Choose the correct answer from the options given below:

1. (A) and (D) only

2. (A) and (C) only

3. (B) and (D) only

4. (B) and (C) only

Q.43. Identify the wired transmission media for the following:

"They are less expensive and commonly used in telephone lines and LANs. These cables are of two types: Unshielded and shielded."

1. Optical Fibre

2. Coaxial Cable

3. TWisted pair cabie

4. Microwaves

Q.44. The term Cookie is defined as:

1. A computer cookie is a small file or data packet which is stored by a website on the server' s computer.

2. A cookie is edited only by the website that created it, the client's computer acts as a host to store the cookie.

3. Cookies are used by the user to store data on the computer.

4. A cookie is a security system to protect your data.

Q.45. Identify the concept behind the below-given scenario:

If an attacker limits or stops an authorized user to access a service, device or any such resource by overloading that resource with illegitimate requests.

1. Snooping

2. Eavesdropping

3. Deniar or service

4. Plagiarism

Q.46. The HTTPS based websites require:

1. Search Engine Optimization

2. Digital authencity

3. WWW Certificate

4. SSL Digital Certificate

Q.47. State the output of the following query.

SELECT ENGTH(MID('INFORMATICS PRACTICES',5,-5));

1. NO OUTPUT

2. 5

3. 0

4. ERROR

Q.48. Match List-I with List-II

List-I	List-I1
(A) group by	(1) math function
(B) mid)	(II) aggregate function
(C) count()	(III) having
(D) mod()	(IV) text function

Choose the correctanswer from the options given below:

1. (A) - (III), (B) - (IV), (C) - (II), (D) - (I)

2. (A) - (I), (B) - (III), (C) - (II), (D) - (IV)

3. (A) - (I), (B) - (II), (C) - (IV), (D) - (III)

4. (A) - (III), (B) - (IV), (C) - (I), (D) - (II)

Q.49. What will be the format of the output of the NOW) function?

1. HH:MM:SS

2. YYYY-MM-DD HH:MM:SS

3. HH:MM:SS YYYY-MM-DD

4. YYYY-DD-MM HH:MM:SS

Q.50. State the output of the following query:

SELECT ROUND(9873.567,-2);

1.9900

2.9873

3.9800

4.9873.5

Solution

Q.1.

Answer: 3. Cartesian Product

- The Cartesian Product combines every tuple of the first relation with every tuple of the second relation.
- Example:
- Course = {C1, C2}, Student = {S1, S2, S3}
- Course × Student = {(C1,S1), (C1,S2), (C1,S3), (C2,S1), (C2,S2), (C2,S3)}
- Other operations like Union, Intersection, or Set Difference do not combine all tuples in this way.

Tip: Whenever you see × in relational algebra, think "every combination" → Cartesian Product.

Q.2.

Answer: Option 4

Name	Hobbies
Anu	Dance
Anuj	Music
Pranav	Reading
Anuj	Reading

Q.3.

Answer: 3. Foreign key

The Foreign Key is used to represent the relationship between two relations (tables).
Here, the Deptno field in the Employee table refers to the Deptno field in the Department table — linking employees to their departments.

Q.4.

Answer: 3. Default

A default value is automatically assigned to a column when no value is provided during data insertion.

Q.5.

Answer: 1. ALTER TABLE StudAtt ADD PRIMARY KEY(Rno, Attdate);

To add a **composite primary key** (using more than one column) **after table creation**, the correct SQL syntax is:

Q.6.

Answer: 1. returns records without repetition

The DISTINCT keyword in a SELECT statement is used to **eliminate duplicate rows** from the result set, ensuring that only **unique records** are returned.

Q.7.

Answer: 3. LIKE operator

The **LIKE** operator is used in SQL to **search for a specific pattern** in a column, often with wildcards like:

- % → matches any sequence of characters
- _ → matches a single character

Q.8.

Answer: 1. 3

The MONTH("2010-03-05") function returns the numeric value of the month from the given date.
Here, the date is 2010-03-05, so the month is March, which corresponds to 3.

Q.9.

Answer: 1. (A) - (III), (B) - (I), (C) - (II), (D) - (IV)

Function	Description

count(marks)	Counts all **non-null** values in the *marks* column → **(III)**
count(*)	Counts **all rows** (including those with NULLs) → **(I)**
avg(marks)	Finds **average** of non-null *marks* → **(II)**
sum(marks)	Finds **sum** of all *marks* → **(IV)**

Q.10.

Answer: 1. 30

The AVG() function **ignores NULL values** when calculating the average.

Given Data:
Marks = 20, 40, NULL, 30

Calculation:
Average = (20 + 40 + 30) / 3 = **90 / 3 = 30**

Q.11.

Answer: 2. Intersect

- The **INTERSECT** operation in relational algebra returns only the tuples that are **common to both relations**.
- **Union** returns all tuples from both relations, **Set Difference** returns tuples in one relation but not in the other, and **Cartesian Product** pairs all tuples from the first relation with all tuples from the second.

Q.12.

Answer: 3. 192.168.0.178.

Reason: A valid IPv4 address has four numbers (0–255) separated by dots. Option 1 is a MAC address, option 2 has 256 (invalid), option 4 has -1 (invalid), so only option 3 is correct.

Q.13.

Answer: 2. (C), (A), (D), (B)

Explanation: In Python:

- **try:** block comes first to execute code that may raise an exception.
- **except:** block handles specific exceptions if they occur.
- **else:** block executes if no exception occurs.
- **finally:** block executes **always**, whether an exception occurred or not.

So the sequence is: **try → except → else → finally**.

Q.14.

Answer: 3. Pickling.

- **Pickling** is the process of converting a Python object in memory into a byte stream so it can be saved to a file or sent over a network.
- **De-serialization** (or unpickling) is the reverse process—converting byte streams back into Python objects.
- **read()** and **write()** are file operations, not object-to-byte conversion processes.

Q.15.

Answer: 3.

- To read data from a **binary file** using pickle, the file must be opened in **binary read mode ("rb")**.
- The pickle.load() function is used to **load the object** from the file.
- Other options are incorrect because:
- **Option 1:** Opens in text mode "r", not binary.
- **Option 2:** Uses f1.load() instead of pickle.load(f1) and has a typo (f1.closen).
- Option 4: Uses f1.read(), which reads raw bytes but doesn't deserialize the object.

Q.16.

Answer: 2. file.open("data.txt","r+").

- "r+" mode opens a file for **both reading and writing**.
- "rw" and "rw+" are **invalid modes** in Python.
- file.open("data.txt") opens the file in **read-only mode** by default.

Q.17.

Answer: 1. Polish expression.

- In a **Polish expression (prefix notation)**, the operator comes **before** its operands.
    - Example: + 5 3 means 5 + 3.
- **Infix expression:** Operator is **between** operands (5 + 3).
- **Postfix expression:** Operator is **after** operands (5 3 +).
- **Reverse Polish expression** is another name for **postfix notation**, not prefix.

Q.18.

Answer: 3. 31

1. **Postfix evaluation:** Operands are pushed to a stack; operators act on the most recent operands.

Expression: 24 5 7 * 5 / +

- Step 1: Push 24 → Stack: [24]
- Step 2: Push 5 → Stack: [24, 5]
- Step 3: Push 7 → Stack: [24, 5, 7]
- Step 4: * → Pop 7 and 5, multiply: 5 * 7 = 35 → Push 35 → Stack: [24, 35]
- Step 5: Push 5 → Stack: [24, 35, 5]
- Step 6: / → Pop 5 and 35, divide: 35 / 5 = 7 → Push 7 → Stack: [24, 7]
- Step 7: + → Pop 7 and 24, add: 24 + 7 = 31 → Push 31 → Stack: [31]

Q.19.

Answer: 4. LIFO, one.

- A **STACK** follows the **LIFO (Last In, First Out)** principle.
- **Insertion (push)** and **deletion (pop)** happen from **one end only**, called the **top** of the stack.
- FIFO (First In, First Out) applies to **queues**, not stacks.

Q.20.

Answer : 2. Queue.

- A **queue** follows the **FIFO (First In, First Out)** principle, which is ideal for handling requests in the order they arrive.
- In the given scenario, users' requests to view results should be **served in the order they arrive**, especially when the server has a limit on concurrent requests.
- **Stack** (LIFO) would serve the most recent request first, which is not fair.
- **List** and **Dictionary** don't inherently manage order or concurrency like a queue does.

Q.21.

Answer: 2. (A), (B) and (C) only.

- **isEmpty (A):** Checks if the queue is empty before performing dequeue to avoid underflow.
- **isFull (C):** Checks if the queue is full before performing enqueue to avoid overflow.
- **peek (B):** Allows viewing the front element without removing it, which is often needed in efficient queue operations.
- **update (D):** Not a standard operation for basic queue functionality.

Q.22.

Answer: 3. Between A to D.

- In networking, **repeaters** are used when the signal distance exceeds the maximum allowable range for proper transmission.

- From the distance table:
  - A to B = 20 m (within limit)
  - A to C = 50 m (within limit)
  - A to D = 110 m (**exceeds typical Ethernet limit of 100 m**) → repeater needed
  - A to E = 0 m (no distance, no repeater needed)

So, a **repeater is required between A and D** to ensure signal integrity.

Q.23.

Answer: 3) 24 bits

A MAC (Media Access Control) address is a 48-bit unique identifier for a network device. It is divided into two parts: the **OUI** and the device-specific ID. The **OUI** identifies the manufacturer of the device and occupies the **first 24 bits** (or first 3 bytes) of the MAC address. The remaining 24 bits are used by the manufacturer to assign unique IDs to each device.

Q.24.

Answer: 3) (B), (A), (D), (C)

In binary search, you first initialize the pointers with first = 0 and last = n-1 (**B**). Then, calculate the middle index mid = (first + last)//2 (**A**). Compare numList[mid] with the key: if equal, print the position; if numList[mid] > key, update last = mid-1; otherwise, update first = mid+1 (**D**). If the key is not found after the search, print "Search unsuccessful" (**C**).

Q.25.

Answer: 2) gets reduced by half

Binary search works by repeatedly dividing the search area in half. You compare the key with the middle element: if the key is smaller, you discard the right half; if larger, you discard the left half. This **reduces the search area by half** each time, making the search very efficient.

Q.26.

Answer: 2) The key is in the second half

In an ascending sorted list, all elements **after the middle element** are greater than the middle element. If the middle element is **less than the key**, the key cannot be in the first half (which contains smaller elements). Therefore, the key must be in the **second half** of the list.

Q.27.

Answer: 2. (A), (C), (D), (B)

- Bubble sort works by repeatedly swapping adjacent elements if they are in the wrong order.
- After each pass, the largest element "bubbles up" to its correct position.
- Applying this to the given list gives the sequence:

1. (A) – during first pass (partial swaps start)
2. (C) – after first pass
3. (D) – after second pass
4. (B) – final sorted list

Q.28

Answer: 3. Time complexity

- Time Complexity is a theoretical measure that tells us how much time an algorithm takes to run depending on the size of the input data.
- It helps us compare different algorithms without actually running them — by analyzing how their runtime increases as input grows.

Q.29.

Answer: (2) Mean is the average of numeric values of an attribute.

The mean represents a **measure of central tendency**, not a **measure of variability**. Measures of variability (or dispersion) describe how spread out

the data is, such as range, variance, or standard deviation. Hence, the statement about the mean is incorrect.

Q.30.

Answer: (3) Unstructured data

When recording a video, the data generated does not follow a fixed format or organized structure (like rows and columns). It consists of raw media files — visuals, audio, and frames — which cannot be easily stored in traditional databases. Such data is known as **unstructured data**.

Q.31.

Answer: 1. 50

The **mode** is the value that occurs **most frequently** in a given dataset.

The **highest frequency = 5**, which corresponds to **50 kg**.

Q.32.

Answer: 2. (A) → (III), (B) → (I), (C) → (II), (D) → (IV)

List-I	Explanation	List-II (Match)
(A) **Primary Key**	A field (attribute) that **uniquely identifies each record (tuple)** in a table.	**(III)**
(B) **Degree**	The **total number of attributes (columns)** in a table.	**(I)**
(C) **Foreign Key**	An attribute used to **relate two tables** (establishes referential integrity).	**(II)**
(D) **Constraint** (spelled as "Copotroint" in question)	A **restriction or rule** applied on the type of data inserted in a column.	**(IV)**

Q.33.

Answer: 3. Domain

In SQL, each column (attribute) in a table can take values from a specific **set of permissible values**, known as its **domain**.

For example, if a column "Age" can only have integer values between 0 and 120, then that range defines the **domain** of the column.

Q.34.

Answer: 1. Data Dictionary

Meta-data means **"data about data"** — it describes the structure, organization, and properties of data stored in a database.

A **Data Dictionary** stores this kind of information — such as table names, column names, data types, constraints, etc. Hence, it acts as a **catalog of metadata**.

Q.35.

Answer: 4. Scalar

Single row functions operate on **one row at a time** and return **one result per row**.
These are also called **scalar functions**, because they return a **single (scalar) value** for each row of input.

Q.36.

Answer: 1. DROP TABLE SPORTS;

In SQL:

- The **DELETE** command removes **rows (data)** from a table but keeps the table structure.
- The **DROP TABLE** command removes the **entire table permanently**, including its structure and data.

Hence, to delete the table **'sports'** permanently, the correct command is:

DROP TABLE SPORTS;

Q.37.

Answer: 3. (A), (B), (C) and (D)

In SQL, the following are **text (string) functions**:

- **MID()** → Extracts a substring from text (sometimes written as SUBSTRING() or MID()).
- **INSTR()** → Returns the position of a substring within a string.
- **SUBSTR()** → Extracts a part of a string (similar to MID).
- **LENGTH()** → Returns the number of characters in a string.

So, all four — **MID, INSTR, SUBSTR, LENGTH** — are **text functions**.

Q.38.

Answer: (A) → (II), (B) → (IV), (C) → (I), (D) → (III)

Let's correctly match the networking terms:

List-I	Explanation	List-II (Match)
(A) **Router**	A **network device** used to connect different networks.	**(II)**
(B) **Ethernet Card**	Also known as a **Network Interface Card (NIC)** — helps connect a computer to a network.	**(IV)**
(C) **Ring**	Refers to a **network topology** where each device is connected in a circular manner.	**(I)**
(D) **PAN** (Personal Area Network)	A **type of network** used for short-range communication (like Bluetooth).	**(III)**

Q.39.

Answer: 3. HTML

HTML (HyperText Markup Language) is the standard language used to create and design web pages.

It defines the structure of a webpage using elements like headings, paragraphs, links, images, and tables.

Q.40.

Answer: 4. (A) → (II), (B) → (I), (C) → (IV), (D) → (III)

List-I	Explanation	List-II (Match)
(A) **Modem**	A **Modulator–Demodulator** that converts digital signals to analog and vice versa for internet communication.	**(II)**
(B) **RJ45**	An **8-pin connector** used with Ethernet cables in networking.	**(I)**
(C) **Network Interface Unit**	Refers to an **Ethernet card** that connects a computer to a network.	**(IV)**
(D) **ISP (Internet Service Provider)**	An **organization providing internet access services**.	**(III)**

Q.41.

Answer: 1. The range of frequencies available for transmission of data through that channel.

Bandwidth refers to the range of frequencies that a communication channel can use for data transmission.

A higher bandwidth means more data can be transmitted per second — just like a wider road allows more vehicles to pass.

Q.42.

Answer: 2. (A) and (C) only (because 1 Gbps = 1024 Mbps).1 Gbps stands for

1 Gbps (Gigabit per second) means **1 billion bits per second**.
In networking terms:

1 Gbps=1024 Mbps1 \text{ Gbps} = 1024 \text{ Mbps}1 Gbps=1024 Mbps

Other options like Kbps, bps (230 bps or 22 bps) are much smaller and incorrect.

Q.43.

Answer: 3. Twisted Pair Cable

The description — *"less expensive, commonly used in telephone lines and LANs, available in two types: Unshielded and Shielded"* — clearly refers to **Twisted Pair Cable**.

- **Unshielded Twisted Pair (UTP):** Used in telephone lines and LAN connections.
- **Shielded Twisted Pair (STP):** Used where extra protection from interference is needed.

Q.44.

Answer: 2. A cookie is edited only by the website that created it, the client's computer acts as a host to store the cookie.

A **cookie** is a **small file or data packet** that a **website stores on the user's (client's) computer**, not on the server.
It helps websites remember user information such as login details, preferences, or items in a shopping cart.
Only the **website that created the cookie** can read or modify it.

Q.45.

Answer: 3. Denial of Service

The scenario describes a situation where an attacker **overloads a server or network** with fake or illegitimate requests, making it **unavailable to legitimate users**.
This is known as a **Denial of Service (DoS)** attack.

Q.46.

Answer: 4. SSL Digital Certificate

Websites that use **HTTPS (HyperText Transfer Protocol Secure)** ensure secure data transfer between the browser and the server.

To establish this secure connection, they require an **SSL (Secure Sockets Layer) Digital Certificate**, which encrypts the data and verifies the website's authenticity.

Q.47.

Answer: 4. ERROR

Let's analyze the query:

SELECT LENGTH(MID('INFORMATICS PRACTICES',5,-5));

- The function MID('INFORMATICS PRACTICES', 5, -5) tries to extract a substring starting from **position 5** with a **negative length (-5)**.
- In SQL, the MID() (or SUBSTRING()) function **does not accept negative length values**.
- Using a negative number for length produces an **invalid argument error**.

Hence, the query will **not execute successfully**.

Q.48.

Answer: 1. (A) → (III), (B) → (IV), (C) → (II), (D) → (I)

Let's match each SQL term with its correct category

List-I	Explanation	List-II (Match)
(A) **GROUP BY**	Used to **group rows** based on a column for performing aggregate functions (works with **HAVING** clause).	**(III)**
(B) **MID()**	A **text function** that extracts a substring from a string.	**(IV)**
(C) **COUNT()**	An **aggregate function** that counts the number of rows or values.	**(II)**
(D) **MOD()**	A **mathematical function** that returns the remainder of a division.	**(I)**

Q.49.

Answer: 2. YYYY-MM-DD HH:MM:SS

In SQL, the **NOW()** function returns the **current date and time** in the standard **datetime format**:

YYYY-MM-DD HH:MM:SS\text{YYYY-MM-DD HH:MM:SS}YYYY-MM-DD HH:MM:SS

Example:
2025-10-14 09:30:45

Q.50.

Answer: 1. 9900

The SQL function ROUND(number, n) rounds a number to **n digits**.

- If **n is positive**, it rounds to that many decimal places.
- If **n is negative**, it rounds to the nearest **10, 100, 1000**, etc.

Here:

ROUND(9873.567, -2)

- The -2 means **round to the nearest hundred**.
- 9873.567 → the hundreds digit is **8** and the tens digit is **7** (≥ 5), so it rounds up to **9900**.