L2 : Data Models Practice Questions

1-Tut : MCQ - 1 (Conceptual Model)

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Which of the following is true for conceptual model:

Options

This problem has only one correct answer

It is independent of hardware
It is independent of software
It is dependent on both hardware and software
It is independent of both hardware and software

Correct Answer : D

Solution Description

Conceptual model is the high level data model which does not depend on the hardware and the software.

2-Tut : MCQ -2

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When asked to design a high level conceptual data model, the very first step is _____.

Options

This problem has only one correct answer

Functional requirement analysis
Logical design analysis
Requirement analysis
Conceptual design analysis

Correct Answer : C

Solution Description

Before we start with the designing of a conceptual data model , we should be clear of the requirements of the system. Hence, requirement analysis is the first step that needs to be taken.
Let's take an example to understand this. You have been asked to create a data model for a BANK. So the very first step will be collecting the necessities and functionalities that the BANK database must have . Some examples can be it should be able to store: current balance, type of account, customer name , account numbers etc.

3-Tut : MCQ - 3

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Which one of the following is an example of the object-based logical model?

Options

This problem has only one correct answer

entity relationship model
document model
relational model

network model

Correct Answer : A

Solution Description

The Entity Relationship model is the example of an object-based logical model as it uses the notions of entities or objects and relationships among them instead of using implementation-based concepts, such as records, used in the record-based models. This delivers flexible structuring abilities and permits data limitations to be specified explicitly.

4-Tut : MCQ - 4

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According to a certain given database schema, manager's salary is hidden from employees, which level of abstraction is it.

Options

This problem has only one correct answer

Physical level
Conceptual level
External level
Internal level

Correct Answer : C

Solution Description

External level abstraction provides a powerful and flexible abstraction by hiding certain parts of a database from certain users according to the requirements. Also, in this abstraction, the user is not aware of any missing attributes from the view. It also allows users to access data in a customized way according to their needs, and due to this functionality, different users see the same data in different ways simultaneously.

5-Tut : MCQ - 5

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Which of the following model tells how data will be stored:

Options

This problem has only one correct answer

Physical data model
Creational data model
Conceptual data model
Representational data model

Correct Answer : A

Solution Description

Physical Data model represents the physical structure of the database which includes planning of how the data will be organised, stored on the disk and various access methods available for it.

6-Tut : MCQ - 6 (Data Modelling)

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Data modelling helps in achieving abstraction in DBMS.

Options

This problem has only one correct answer

True
False

Correct Answer : A

Solution Description

Abstraction means showing only what is required and hiding the extra information. This is achieved through the three kind of data modelling: Conceptual, Representational and Physical data models.

7-Tut : **MCQ - 7**

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Which of the following data models describes the database at the highest level ?

Options

This problem has only one correct answer

Conceptual data model
physical data model
network data model
hierarchical data model

Correct Answer : A

Solution Description

A conceptual data model describes and conveys high-level relationships between concepts/entities. In simpler words, it helps an organization see their data – and the relationships between distinct data.

8-Tut : **MCQ - 8**

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Which one of the following is a popular representational model?

Options

This problem has only one correct answer

ER model
Relational model
Hierarchical model
Network model

Correct Answer : B

Solution Description

The relational model in DBMS is used to organize and manage the data stored in a database. It stores data in the form of tables. Each row represents an entity, and each column represents the entity's properties.

9-Tut : MCQ - 9 (Database Schema)

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Database schema is part of which design process

Options

This problem has only one correct answer

Conceptual design
Logical design
Physical Design
None of the above

Correct Answer : B

Solution Description

Going by the definition of database schema , it is the skeleton structure that demonstrates the logical view of the complete database. It is responsible for describing the organization of data and how the relations will be associated among them. It also formulates all the conditions that are to be applied on the data.

10-Tut : MCQ - 10 (3-Tier Architecture)

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In 3 tier architecture, which of the following deals with the physical storage of data

Options

This problem has only one correct answer

External schema
Internal schema
Conceptual schema
All of the above

Correct Answer : B

Solution Description

The internal schema describes the physical storage structure of the database. It is a very low-level representation of the complete database.

11-Tut : MCQ - 11

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Which of the following shows only the relevant data to users and hides the rest

Options

This problem has only one correct answer

Physical Schema
External Schema
Conceptual Schema
None of the above

Correct Answer : B

Solution Description

External schema shows only the data a user requires, in the form of views. Other unnecessary data is kept hidden from the users.

12-Tut : MCQ - 12

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Which of the following describes the design of a database and the relationship between data ?

Options

This problem has only one correct answer

Conceptual Schema
Physical Schema
External Schema
None of the above

Correct Answer : A

Solution Description

The conceptual schema defines the structure of the database for a group of users. It abstracts information about the physical storage structures and defines data types, entities, relationships, etc.

13-Tut : MCQ - 13 (Data Modification)

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Which of the following changes whenever we modify any data

Options

This problem has only one correct answer

Database schema
Database instance
None of the above

Correct Answer : B

Solution Description

Database instance refers to the data stored in the database at a particular moment. On the other hand database schema is the structure of the database and does not change if we are modifying only the data. So, if we're adding, removing, changing the data it will only change the database instance.

14-Tut : MCQ - 14

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Which of the following is/are true with reference to ‘view’ in DBMS?

1. A ‘view’ is a special stored procedure executed when a certain event occurs.
2. A ‘view’ is a virtual table, which occurs after executing a pre-compiled query.

Options

This problem has only one correct answer

Only 1 is true.

Only 2 is true
None
Both are true.

Correct Answer : B

Solution Description

A view is a subset of a database generated from a query and stored as a permanent object. Definition of view is permanent, but the data included therein is dynamic depending on the point at which the view is accessed. Views represent a subset of the data contained in a table.

15-Tut : **MCQ - 15**

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Match the following:

1. Physical Level Abstraction	p) what data is stored in the Database
2. Instance	q) design of the database
3. Logical Level Abstraction	r) information stored in database at a particular
4. Schema	s) how data is stored in the database

Options

This problem has only one correct answer

1-s,2-r,3-p,4-q
1-p,2-q,3-r,4-s
1-s,2-p,3-q,4-r
1-s,2-q,3-p,4-r

Correct Answer : A

Solution Description

1. Physical level abstraction is one of the lowest levels of abstraction. It provides us with the details of complex data structures. It tells us how the data is stored in the database.
2. The instance, also known as the current state or database state, provides us with information about what data is stored in a database at a particular moment.
3. Logical level abstraction is the second last level of abstraction architecture. It provides us with information about what data is stored in the database.

4. A database schema provides a logical view of the database. It is like a skeleton structure for the database. It is also known as the design of the database.