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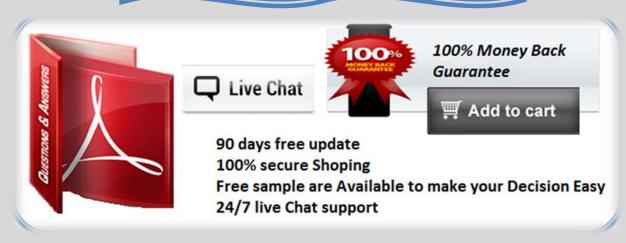# Microsoft

CODE: 98-364

Exam Name: Microsoft Database Fundamentals

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Type   Demo

QUESTIONS & ANSWERS

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Question: 1

John works as a Database Administrator for Bluewell Inc. The company has a SQL Server database. A table in the database has a candidate key and an attribute that is not a constituent of the candidate key. The non-key attribute depends upon the whole of the candidate key rather than just a part of it. Which of the following normal forms is represented in the scenario?

A. 4 NF
B. 2 NF
C. 1 NF
D. 3 NF

Answer: B

Explanation: Second normal form (2NF) is used in database normalization. A table that is in first normal form must meet additional criteria if it is to qualify for second normal form. Specifically, a 1NF table is in 2NF if and only if, given any candidate key and any attribute that is not a constituent of a candidate key, the non-key attribute depends upon the whole of the candidate key rather than just a part of it. Answer; C is incorrect. The 1NF is a normalization form in which each column in a row contains a single value, i.e., each attribute of the entity is single valued. Single valued attributes are also known as atomic attributes, as they cannot be decomposed into smaller units. There are mainly three kinds of attributes that prevent a table from being in the first normal form. They are as follows: Composite attributes Plural attributes (attributes that have more than one value) Attributes with complex data types The table below is in 1 NF, as all the columns in each row contain a single value.

SSN	Name	Salary	DOB	Department
A101	Smith	20000	23/09/78	Sales
A102	Flora	23000	12/12/67	Sales
A103	Dinzi	12000	12/25/67	Production
A104	Henry	23000	23/5/78	Marketing
A105	Ricky	15000	12/09/68	Sales
A106	Esha	12500	05/06/77	Marketing
A107	Ema	34000	07/09/76	IT

Answer; D is incorrect. Third normal form (3NF) is used in database normalization. A table is in 3NF if and only if the relation S (table) is in second normal form (2NF) and every non-prime attribute of S is non-transitively dependent on every key of S.   Answer; A is incorrect. Fourth normal form (4NF) is a normal form used in database normalization. Introduced by Ronald Fagin in 1977, 4NF is the next level

of normalization after Boyce-Codd normal form (BCNF). Whereas the second, third, and Boyce-Codd normal forms are concerned with functional dependencies, 4NF is concerned with a more general type of dependency known as a multivalued dependency. Symbolically, it can be represented as follows: If A ->> B|C, then A -> B and A -> C   Here, A, B, and C are attributes.

Question: 2

You work as a Database Designer for DataOneWorld Inc. The company has a SQL Server database. You are assigned the task of creating a data model of an enterprise based on a specific data model. The model to be created should be independent of a particular DBMS. Which of the following database designs will help you accomplish the task?

A. Logical database design
B. Conceptual database design
C. Physical database design
D. Application design

Answer: A

Explanation: Logical database design is the process of creating a data model of an enterprise based on a specific data model, but independent of a particular DBMS. In the logical database design stage, users can define tables and relationships that reflect the conceptual design.   Answer; C is incorrect. Physical database design is the process of producing a description of the database implementation on secondary storage. It describes base relations, file organizations, and indexes used to achieve efficient access to data. It also describes any associated integrity constraints and security measures, tailored to a specific DBMS system. This involves the actual programming of the database, taking into account the features and limitations of the DBMS and the client. Answer; B is incorrect. Conceptual database design is the process of constructing a model for the data at a high level of abstraction without using DBMS. It consists of the construction of an Entity-Relationship schema, providing an optimal description of the user requirements. Answer; D is incorrect. Application design is a design of the user interface and the application programs that use and process the database. Database and application design are parallel activities. Application design includes two important activities: transaction design and user interface design.

Question: 3

Which of the following steps in database planning helps to determine the requirements of the database through interviewing?

A. Gathering information
B. Identifying the relationship between objects

C. Identify the objects
D. Identifying the type of information for each objects
E. Modeling the object

Answer: A

Explanation: Gathering information is the first step of database planning and requires a good understanding of what tasks are to be performed in the database. In case the database has to replace a paper-based or a manual system, the old system can provide all the necessary information. Moreover, all those who were involved with the previous system should be interviewed to determine what they did and what is now needed for the new database. The limitations, problems, and bottlenecks of the old system should also be identified. Answer; C is incorrect. In the object identification process in database planning, it is necessary to identify the key objects or entities for database management. There are generally a few primary objects, and once these are identified, the related items become visible. Answer; E is incorrect. Object modeling is the third step in database planning in which objects are identified in the system. A user should record an object in such a way that it is represented visually in the system. He can use the database model as a reference during implementation of the database. Database developers use tools such as pencils, paper, word processing etc., as well as create software programs for data modeling of the database. Answer; D is incorrect. Identifying information for objects is the fourth step in database planning where the information for each object is stored. In a table, there are four columns that contain different types of information for objects: 1.Categorical column: In this column, data is classified and grouped, and a limited selection of data is stored. 2.Relational or referential column: In this column, a link is established between information in one table and related information in another table. 3.Identifier column: In this column, each item stored in the table is identified. 4.Raw data column: In this column, tangible information is stored and is determined by a source that is external to the database. Answer; B is incorrect. Identifying relationships between objects is the last step in database planning, which is the ability to relate information about various items in the database. Isolated types of information can be stored separately, but the data can be combined according to the requirements of the database engine. Identifying the relationship between objects in the design process necessitates looking at the tables, determining how the tables are logically related, and adding relational columns to the tables that establish a link from one table to another.

Question: 4

Consider the case of a fruit juice company. The company manufactures fruit juices and supplies them to wholesalers. The Database Designer creates a table named Production. The code is given below: 1.CREATE Table Production 2.(Fruit_type VarChar, 3.Fruit_name Char(20), 4.Quantity Int(3)) Which of the above-mentioned lines has an error?

A. Line 3
B. Line 2
C. Line 1
D. Line 4

Answer: B

Explanation: In line 2, Fruit_type is declared as VarChar. A VarChar datatype should always specify the maximum length of the column. However, in this case, the maximum length has not been specified.

Question: 5

John works as a Database Administrator for DataOneWorld Inc. The company has a SQL Server database. John wants to insert records in a table where the database is structured in a fixed format. Which of the following data models will he use to accomplish the task?

A. Object relational data model
B. Entity-Relationship Model
C. Network data model
D. Relational model

Answer: D

Explanation: A relational model uses a collection of tables to represent both data and the relationship between those data. Every table has multiple columns, and each column has a unique name. A relational model is an example of a record-based model. Record-based models are so named because the database is structured in a fixed format. Each table in the database contains records of a particular type and each record type defines a fixed number of fields or attributes. This model is the most widely used data model, and most database systems are based on this model. This model is at a lower level of abstraction than the E-R Model.

Answer; B is incorrect. The Entity-Relationship Model is a collection of objects called entities and the relationships between these objects. Entities in a database are known as attributes. A relationship is an association among several entities. It is a conceptual representation of structured data. Entity-relationship modeling is a relational schema database modeling method that is used in software engineering to produce a type of conceptual data model of a system, often a relational database. The logical structure of a database can be expressed graphically by an E-R diagram, which has the following components: Rectangle: It represents entity sets. Ellipse: It represents attributes. Diamond: It represents relationships among entity sets. Line: It links attributes to entity sets. Answer; A is incorrect. An object relational data model (ORD) is similar to a relational data model, but with an object-oriented database model. Objects, classes, and inheritance are directly supported in database schemas and in the query language. Answer; C is incorrect. The network data model contains logical information such as connectivity relationships among nodes and links, directions of links, and costs of nodes and links. A node represents an object of interest and a link represents a relationship between two nodes.