1) The DBMS acts as an interface between what two components of an enterprise-class database system?

a) Database application and the database

A DBMS serves as singular location for accessing database resources – granting permissions, controlling reads/writes/locks, executing commands etc. A database application (such as an API or some other client-facing resource) would interact with the data via a DBMS (RDBS, NoSQL etc)

b) Data and the database

The data is the database….

c) The user and the database application

This would be controlled in the application layer

d) Database application and SQL

SQL is a protocol, not a component

2) The following are components of a database except which of the following?

a) user data

If you don’t track users – how can you audit your data?

b) metadata

Column definitions, relationships etc are critical pieces of information in describing data

c) reports

reports are created from the underlying data – they are assembled ad-hoc via parameters/stored procedures/views.

d) indexes

If you don’t have indices, your database is garbage 😊

3) Table is synonymous with the term

None of these – are you kidding me?

a) record

b) relation

Putting this as the answer – even though it is NEVER used in practice

c) column

d) row

4) Row is synonymous with the term

a) column

Column and field are synonymous with each other – but not with row

b) relation

Defines a relationship between entities/tables

c) field

see a)

d) record

Tables contain rows/records

5) Attribute is synonymous with the term

a) record

Record and row are equivalent

b) relation

A relation could be defined via an attribute but is not itself an attribute

c) column

An attribute usually refers to a database field/column

d) row

See a)

6) For some relations, changing the data can have undesirable consequences called:

a) referential integrity constraints.

Constraints can prevent undesirable consequences

b) modification anomalies.

Modification anomalies leave your data in an inconsistent state

c) normal forms.

Normal forms also prevent modification anomalies

d) transitive dependencies.

Are indirect relationships that occur in the data which allow for the association of tables that re not directly referenced via a foreign key relation.

7) The different classes of relations created by the technique for preventing modification anomalies are called:

a) normal forms.

Normal forms are ways of structuring data to prevent anomalies – but they are not relations themselves

b) referential integrity constraints.

Referential integrity constraints are the main component of a normalized database and allow for the prevention of all types of data anomalies

c) functional dependencies.

Functional dependencies are types of dependencies – they do not enforce referential integrity

d) relation instance.

A tuple of values that is unique – basically a row in a normalized entity table

8) A database schema is

a) A plan created by the database.

Plans are created by users and admins, not the DB itself

b) The logical design of the database.

A schema describes all of the tables, columns and relations contained in the database

c) A particular instance of a database.

An instance of the database is simply a repository for holding the underlying data – in an of itself, it is not descriptive. Though you could always infer the schema, given an instance.

d) The snapshot of the data in the database at a given time.

See answer for c)

9) The primary key is selected from the

a) composite keys.

While it may be selected from the group of composite keys, a primary key does not have to be a composite key. It can (and should often be) a single column.

b) determinants.

Determinants are typically best moved out of a table – they are an indicator that your database is not normalized properly.

c) candidate keys.

Candidate keys are tuples (or singular fields) that can uniquely identify a row in a table

d) foreign keys.

Foreign keys are links to other tables – and are often primary keys on the other table.

10) Which of the following is a group of one or more attributes that uniquely identifies a row?

a) Key

A key may be a tuple, but not all tuples are keys

b) Determinant

See 9 b)

c) Tuple

See a)

d) Relation

Seriously?

11) A relation is considered a

a) Column.

b) one-dimensional table.

Looked this up – only because it’s a term that no one ever uses. You should make that clear.

Professionals don’t use this because it’s confusing (and stupid)

Entity or model is the preferred term.

c) two-dimensional table.

d) three-dimensional table.

12) In the relational model, relationships between relations or tables are created by using:

a) composite keys.

A relationship could be defined via a composite key – but not all composite keys define relationships

b) determinants.

Who uses this lingo? DBAs?

c) candidate keys.

Same as a)

d) foreign keys.

Foreign keys always define relationships between tables and enforce referential integrity

13) You have run an SQL statement that asked the DBMS to display data in a table named UserTables. The results include columns of data labeled ‘TableName,’ ‘NumberOfColumns’ and ‘PrimaryKey.’ What are these labels?

a) user data

This is typically log in and access control information

b) metadata

SELECT \* FROM information\_schena.tables

c) a report

C’mon

d) indexes

Stop it – these aren’t even close

14) An Enterprise Resource Planning application is an example of a(n) ?

a) single-user database application

A crappy one would be single user

b) multiuser database application

Multiuser would always be preferred

c) e-commerce database application

ERPs are for internal use

d) data mining database application

Is this even a thing? It shouldn’t be…..

15) The following are functions of a DBMS except ?

a) creating and processing forms

If you need forms for your database, you stink as a DBA

b) creating databases

c) processing data

d) administrating databases