

Database Quiz Answers

Q1. DBMS is an interface between

- I. Database and User
- II. Database application and Database
- III. Database and SQL
- IV. Data and Database

Ans. II

- DBMS is an interface between the database application and the database.

Q2. Which of the following is not a disadvantage of the file system to store data?

- I. Data redundancy and inconsistency
- II. Difficulty in accessing data
- III. Data isolation is not present
- IV. High cost

Ans. IV

- The file system approach is cheaper to design.

Q3. Given the data provided below choose the most suitable Primary Key.

| FirstName | LastName | Age | Place of Birth |
|-----------|----------|-----|----------------|
| Jack | Smith | 20 | London |
| Jane | Brown | 22 | London |
| Jack | Brown | 20 | London |
| Jeff | Brown | 20 | Liverpool |
| Jeff | White | 22 | Liverpool |
| Jack | Brown | 20 | Liverpool |

1. FirstName, LastName, Age, Place Of Birth
2. FirstName, LastName, Place Of Birth
3. LastName, Age, Place Of Birth
4. FirstName, LastName, Age

Correct: FirstName, LastName, Place Of Birth

- None of the columns is unique, and even any combination of two columns.
- {FirstName, LastName, Age} is repeated for Jack Brown and age is 20.
- {FirstName, LastName, Place of Birth} is unique so it is a suitable Key.

Q4. Consider an application for Club membership. There are many clubs at different locations. A club can have many members. Each member belonging to a particular club has

a unique identity number. The member id can be the same for different clubs. The below relations are created.

- Club (ClubId, Name, Location)
- Member (ClubId, MemberId, Name, Address)

Identify the Primary key for Club relation.

- ClubId
- Name
- Location

Ans. ClubId

- Each member belonging to a particular club has a unique identity number - ClubId

Q5. Consider an application for Club membership. There are many clubs at different locations. A club can have many members. Each member belonging to a particular club has a unique identity number. The member id can be the same for different clubs. The below relations are created.

- Club (ClubId, Name, Location)
- Member (ClubId, MemberId, Name, Address)

Identify the Primary key for Member relation.

- ClubId
- MemberId
- Name
- {ClubId, MemberId}

Ans. {ClubId, MemberId}

- Each member belonging to a particular club has a unique identity number. So we need {ClubId and MemberId} both.

Q6. Consider an application for Club membership. There are many clubs at different locations. A club can have many members. Each member belonging to a particular club has a unique identity number. The member id can be the same for different clubs. The below relations are created.

- Club (ClubId, Name, Location)
- Member (ClubId, MemberId, Name, Address)

Identify the Foreign key for Member relation.

- ClubId
- MemberId
- Name
- Address

Ans. ClubId

- Member relations have an attribute ClubId which is referring to Club relation.

Q7. Consider an application for a training institute. Here, a participant can enrol for multiple courses. A course can be enrolled by many participants. Assessments are conducted for courses and marks are awarded to participants. A participant is allowed to take assessment only once for a course. A participant can enrol for a course only if he/she has undertaken the prerequisite course. The below relations are created for the application.

- Participant (ParticipantId, Name, Address)
- Course (CourseId, Desc, Duration, Prerequisite)
- Assessment (CourseId, Marks, ParticipantId)

Identify the Primary key for Participant relation and Assessment relation-

- I. ParticipantId, CourseId
- II. Name, CourseId
- III. Address, ParticipantId
- IV. ParticipantId, {CourseId, ParticipantId}

Ans. ParticipantId, {CourseId, ParticipantId}

- ParticipantId is a key for Participants.
- A participant can enrol for multiple courses. A course can be enrolled by many participants. A participant is allowed to take assessment only once for a course. So {CourseId, ParticipantId} combined will be our Primary key for Assessment relation.

Q8. Consider an application for a training institute. Here, a participant can enrol for multiple courses. A course can be enrolled by many participants. Assessments are conducted for courses and marks are awarded to participants. A participant is allowed to take assessment only once for a course. A participant can enrol for a course only if he/she has undertaken the prerequisite course. The below relations are created for the application.

- Participant (ParticipantId, Name, Address)
- Course (CourseId, Desc, Duration, Prerequisite)
- Assessment (CourseId, Marks, ParticipantId)

Identify the **Foreign key for Course relation**.

- I. CourseId
- II. FK Does Not exist
- III. Prerequisite

Ans. Prerequisite

- A participant can enrol for a course only if he/she has undertaken the prerequisite course. And Prerequisite is itself a Course, so it is a FK and referring to relation Course itself.

Q9. Scenario:

Joho Limited, a firm in the digital media and entertainment domain, has gaming zones in different locations. Due to growth in business, the firm decided to use relational databases to store customer information, product information, and day to day transactional information.

Question: As per the business scenario, a 'Customer' relation is identified with 'CustomerId', 'CustomerName', 'City', 'ContactNumber', 'EmailAddress' as its attributes. While CustomerId, and EmailAddress are unique for every customer, the business requirement says that it is not mandatory for a customer to provide his EmailAddress.

Which of the following would best suit the above context?

- I. CustomerId, EmailAddress can Individually become candidate keys and CustomerId becomes the primary key
- II. CustomerId, EmailAddress can individually become candidate keys
- III. This relation does not have any candidate key
- IV. CustomerId is the candidate key as well as the primary key

Ans. IV

- EmailAddress is unique for every customer but it is not mandatory it can be NULL, So it can't be Primary Key. Only CustomerId is the candidate key and Primary Key.

Q10. Scenario:

Joho Limited, a firm in the digital media and entertainment domain have gaming zones in different locations. Due to growth in business, the firm decides to use relational database to store customer information, product information, and day to day transactional information.

Question: One of the requirements read 'games played by the customer are to be tracked with the timestamp'. While trying to implement this requirement, the expert team finds it necessary to have a transaction table that would have the details of the games played by the customer along with the date and time details. The transaction table is named as gaming with attributes TransactionId, CustomerId, GameId, Date, StartingTime, FinishingTime, AmountPayable. Attributes CustomerId and GameId in the gaming table can take values that are present for customerId and GameId present in customer and game tables respectively.

Which of the following two options would best suit the above context? **[Choose any TWO]**

- I. CustomerId and GameId present in the gaming table can take duplicate values.
- II. CustomerId in the Customer table references the CustomerId in the gaming table and the gameId in the Game table references GameId in the gaming table
- III. CustomerId and GameId are foreign keys present in child table gaming, referring to CustomerId and GameId, the primary keys present in parent tables, Customer and Game respectively
- IV. CustomerId and GameId present in gaming table cannot take null values and duplicate values

Ans. 1,3

Q11. Scenario:

Joho Limited, a firm in the digital media and entertainment domain have gaming zones in different locations. Due to growth in business, the firm decides to use relational database to store customer information, product information, and day to day transactional information.

Question: "A specific requirement requires, an attribute in the Game table has to refer to the Gameld attribute present in the same table. Such a reference would not be possible and it is decided that the requirement is unfeasible."

Choose whether the above decision of the requirement is True or False with the correct reason.

- I. True. An attribute in a table/relation can reference another attribute in the same table/relation
- II. False. An attribute in a table/relation can reference another attribute in the same table/relation and this is called Composite Foreign Key
- III. True. An attribute in a table/relation cannot reference another attribute in the same table/relation
- IV. False. An attribute in a table/relation can reference another attribute in the same table/relation and this is called Self Referencing Foreign Key

Ans. 4

- An attribute in a table/relation can reference another attribute in the same table/relation so the above decision is False. And if an attribute refers to any attribute in the same relation or table it is called Self referencing.