QUIZ-31 Explanation

Q1. Which of the following statement is TRUE regarding CREATE TABLE statement?

a. CREATE table replaces the existing table if it already exists
b. Attributes default to NUMBER data type if data type is not provided
c. Attributes allow NULL value unless NOT NULL clause is provided
d. DEFAULT clause can only be provided for NOT NULL attributes

Q2. Which requirements can be implemented using a referential integrity constraint?

e. Customer must have a name
f. The age of the customer must be greater than 18
g. Customer information must be known before anything is sold to him/her
h. Two customers can't have the same mobile number

Q3. Which of the following statements are TRUE? [Choose any TWO]

i. A column with a CHECK constraint does not allow NULL values
j. A Unique constraint allows multiple rows to have a NULL value
k. A PRIMARY KEY allows a single row to contain a NULL value
l. Referential integrity constraint allows NULL value

Q4. Which requirements can be implemented using a CHECK constraint? [Choose any TWO]

m. Customer must have a name
n. Age of the customer must be greater than 21
o. Customer must have a residence in an Asian Country
p. Two customers cannot have same email id

Q5. Which is the constraint that can be defined only at the column level?

q. UNIQUE
r. NOT NULL
s. DEFAULT
t. PRIMARY KEY

Q6. Consider the creation of the following table: Customer(CustId, AccountNo, CustName) with the combination of columns Custid and AccountNo should be UNIQUE.

Which one of the following options is CORRECT?

u. Put UNIQUE constraints on both columns separately
v. This type of constraint is not possible
w. Put PRIMARY KEY constraint on both columns separately
x. Put a table level UNIQUE constraint involving both the columns

Q7. Consider the current table structure and desired table structure.

ActualTable

Attribute	Data Type
EmpId	NUMBER
EmpName	VARCHAR2(30)
Email	VARCHAR2(15)
BatchName	VARCHAR2(10)
SectionName	VARCHAR2(3)
Stream	VARCHAR2(10)
ClassRoom	NUMBER

ExpectedResult

Attribute	Data Type
EmpId	NUMBER
Name	VARCHAR2(30)
Email	VARCHAR2(25)
BatchName	VARCHAR2(10)
SectionName	VARCHAR2(3)
Stream	VARCHAR2(10)

Attribute	Data Type
EmpId	NUMBER
EmpName	VARCHAR2(30)
Email	VARCHAR2(15)
BatchName	VARCHAR2(10)
SectionName	VARCHAR2(3)
Stream	VARCHAR2(10)
ClassRoom	NUMBER

Attribute	Data Type
EmpId	NUMBER
Name	VARCHAR2(30)
Email	VARCHAR2(25)
BatchName	VARCHAR2(10)
SectionName	VARCHAR2(3)
Stream	VARCHAR2(10)

Identify the statements that will achieve the result.

a. ALTER TABLE Trainee DROP COLUMN (ClassRoom);
b. ALTER TABLE Trainee RENAME COLUMN EmpName to Name;
c. ALTER TABLE Trainee ADD Email VARCHAR2(25);
d. ALTER TABLE Trainee DROP (ClassRoom);
e. ALTER TABLE Trainee MODIFY Email VARCHAR2(25)
f. ALTER TABLE Trainee MODIFY COLUMN EmpName to Name;

i. a, b, e
ii. d, e, f
iii. b, d, e
iv. b, c, d

Q8. The Project Manager has a requirement to update the size of a column and also rename it.

James and Kevin have the following conversations to meet the requirement:

James: I will use alter statement to update the size and column aliasing to rename the column

Kevin: I will use alter statement to update the size and also to rename the column

Whose statement(s) is/are TRUE to meet the requirement given above?

a. Only James
b. Only Kevin
c. Both James and Kevin
d. Neither James and Kevin

Q9. The Project Manager has given the requirement to remove a column and add a new column that accepts values mandatorily that are unique. Team members(Alice, Jack, and John) had the following conversations after the sprint meeting with their manager.

Alice: I will use alter statement to remove the column and also to add a column with a primary key constraint

Jack: I will use a drop statement to remove the column and alter the statement to add a column with a primary key constraint

John: I will use alter statement to remove the column and also to add a primary key constraint

Whose statement(s) is/are entirely TRUE to meet the requirement given above?

a. Only John
b. Both Jack and John
c. Only Alice
d. Both Alice and John

Q10. The Tech Lead has given a requirement to his team(Alice and Charlie) to add a column in the existing table purchase for payment mode in the e-commerce application with a default value as UPI.

Charlie and Alice have the following conversations to meet the requirement:

Charlie: I will use alter statement to add the column and default as UPI payment mode.

Alice: I will use create a statement to add the column and default as UPI payment mode.

Whose statement(s) is/are TRUE to meet the requirement given above?

a. Only Charlie
b. Only Alice
c. Both Alice and Charlie
d. Neither Alice nor Charlie

Q11. What will be the value of the Age column and Country Code after inserting the below data manually in the Contacts table-
Name = Ankit, City= Patna, Mobile=9854132100

Contacts table creation SQL command-

```
CREATE TABLE Contacts(
    Id INTEGER PRIMARY KEY AUTO_INCREMENT,
    Name VARCHAR(20) NOT NULL,
    City VARCHAR(255) NOT NULL,
    Country_Code INTEGER DEFAULT 91,
```

```
        Mobile INTEGER UNIQUE,
        Age INTEGER DEFAULT 28 CHECK (Age>20)
)
```

Option 1- Age=21 Country_Code=91
Option 2- Age=21 Country_Code=NULL
Option 3- Age=28 Country_Code=91
Option 4- Error - Age can't be Null.

Correct- Option 3
Explanation:

➔ The age column default is 28 and the Country code default is 91.

Q12. Scenario: You are creating a database for a library to store information about books and authors. The table book should contain the following attributes:

- ID: a unique numerical identifier for each book
- Title: the title of the book (not null)
- ISBN: the International Standard Book Number (unique)
- Author ID: the ID of the author who wrote the book
- Publication Date: the date the book was published (not null)

Select the correct query to create desired table - books

Option 1.
```
CREATE TABLE books (
   ID INT AUTO_INCREMENT,
   Title VARCHAR(255) NOT NULL,
   ISBN VARCHAR(255) UNIQUE,
   AuthorID INT NOT NULL,
   PublicationDate DATE NOT NULL
);
```
Option 2.
```
CREATE TABLE books (
   ID INT PRIMARY KEY,
   Title VARCHAR(255) NOT NULL,
   ISBN VARCHAR(255) UNIQUE,
   AuthorID INT,
   PublicationDate DATE NOT NULL
);
```
Option 3.
```
CREATE TABLE books (
   ID INT AUTO_INCREMENT PRIMARY KEY,
   Title VARCHAR(255) NOT NULL,
   ISBN VARCHAR(255) UNIQUE,
   AuthorID INT FK,
   PublicationDate DATE NOT NULL
);
```
Option 4.
```
CREATE TABLE books (
   ID INT PRIMARY KEY,
```

```
    Title VARCHAR(255) NOT NULL,
    ISBN VARCHAR(255) UNIQUE,
    AuthorID INT FOREIGN KEY,
    PublicationDate DATE NOT NULL
);
```

Correct:- Option 2
Explanation:

- ➔ Option 1 will create an error as an Auto increment on non-key.
- ➔ Option Correct as per requirement - the primary key is not null and unique.

Q13. Make improvements in the already created table scenario(from Q12):

- Author ID should not be NULL

Option 1. ALTER TABLE books MODIFY COLUMN AuthorID INTEGER NOT NULL;
Option 2. ALTER TABLE books MODIFY AuthorID NOT NULL;
Option 3. ALTER TABLE books MODIFY COLUMN AuthorID NOT NULL INTEGER;
Option 4. ALTER TABLE books MODIFY COLUMN ADD CONSTRAINT NOT NULL;

Correct:- 1
Explanation:

- ➔ ALTER TABLE books MODIFY COLUMN AuthorID INTEGER NOT NULL;

Q14 Make improvement in already created above table books (from Q12 then Q13)

- Create a Tabe named authors with columns - Name, ID auto_increment
- ID is primary key and starts from 101
- Extend AuthorID constraints in books table with foreign key

Option 1 -
```
CREATE TABLE authors(
ID INTEGER PRIMARY KEY,
Name VARCHAR(500) );
ALTER TABLE authors AUTO_INCREMENT=101;
ALTER TABLE books ADD CONSTRAINT AuthorID_fk FOREIGN KEY (AuthorID)
REFERENCES authors(ID)
```

Option 2 -
```
CREATE TABLE authors(
ID INTEGER PRIMARY KEY AUTO_INCREMENT=101,
Name VARCHAR(500) );
ALTER TABLE books ADD CONSTRAINT AuthorID_fk FOREIGN KEY (AuthorID)
REFERENCES authors(ID)
```

Option 3 -
```
CREATE TABLE authors(
ID INTEGER AUTO_INCREMENT=101,
Name VARCHAR(500) );
ALTER TABLE books ADD CONSTRAINT AuthorID_fk FOREIGN KEY (AuthorID)
REFERENCES authors(ID)
```

Option 4 -
```
CREATE TABLE authors(
ID INTEGER AUTO_INCREMENT;,
Name VARCHAR(500) );

ALTER TABLE authors AUTO_INCREMENT=101;
```

ALTER TABLE books ADD CONSTRAINT AuthorID_fk FOREIGN KEY (AuthorID)
REFERENCES authors(ID)

Correct Option- 1

Explanation:

- The auto-increment is only applicable to the primary key column.
- Auto increment value can be specified outside of create table query. Like below

```
create TABLE test(
        id integer unique AUTO_INCREMENT,
   name varchar(20)
) AUTO_INCREMENT=10;
```

Or using Alter table query like in option 1.

Q 15 : **Scenario:** You are creating a database for a music store to store information about albums and artists.

The albums table should contain the following attributes:

ID: a unique identifier for each album (primary key)
Title: the title of the album (not null)
Artist ID: the ID of the artist who created the album(Foreign key)
Release Date: the date the album was released (not null)
Label: the label that released the album (not null)
Price: the price of the album (not null, check >0)

The artists table should contain the following attributes:

ID: a unique identifier for each artist (primary key and auto incremented)
artistName: name of the artist (NOT NULL)

Question: Create the above required table - albums and artists :

Option 1:

```
CREATE TABLE albums (
   ID INT PRIMARY KEY,
   Title VARCHAR(255) NOT NULL,
   ArtistID INT NOT NULL,
   ReleaseDate DATE NOT NULL,
   Label VARCHAR(255) NOT NULL,
   Price DECIMAL(10, 2) NOT NULL,
   CHECK (Price > 0),
   FOREIGN KEY (ArtistID) REFERENCES artists(ID)
);
CREATE TABLE artists (
   ID INT PRIMARY KEY AUTO_INCREMENT,
   ArtistName VARCHAR(255) NOT NULL
);
```

Option 2:

```
CREATE TABLE artists (
   ID INT PRIMARY KEY AUTO_INCREMENT,
   ArtistName VARCHAR(255) NOT NULL
);

CREATE TABLE albums (
```

```
    ID INT PRIMARY KEY AUTO_INCREMENT,
    Title VARCHAR(255) NOT NULL,
    ArtistID INT NOT NULL,
    ReleaseDate DATE NOT NULL,
    Label VARCHAR(255) NOT NULL,
    Price DECIMAL(10, 2) NOT NULL CHECK (Price > 0),
);
```

Option 3:

```
CREATE TABLE artists (
    ID INT PRIMARY KEY AUTO_INCREMENT,
    ArtistName VARCHAR(255) NOT NULL
);


CREATE TABLE albums (
    ID INT PRIMARY KEY AUTO_INCREMENT,
    Title VARCHAR(255) NOT NULL,
    ArtistID INT NOT NULL,
    ReleaseDate DATE NOT NULL,
    Label VARCHAR(255) NOT NULL,
    Price DECIMAL(10, 2) NOT NULL,
    CHECK (Price > 0),
    FOREIGN KEY (ArtistID) REFERENCES artists(ID)
);
```

Correct Ans: 3

Explanation:

- ➔ If we are referencing any attribute from other table that table need to be in database, so Option 1 is wrong as artists table is being referenced while creating albums tabel
- ➔ In Option 2 Foreign key is not assigned.