# 1. What are the main features of object-oriented design? [50 to 100 words]

The main features are:

1. Inheritance
2. Polymorphism
3. Data Hiding
4. Encapsulation
5. Overloading
6. Reusability

# 2. What is a multi-layer application? [50 to 100 words]

A multi-layer application is any application that relies upon or utilizes a middleware application.

# 3. Briefly describe each of the following key features of a Multi-Layered Application: [30 to 100 words each]

1. Presentation (layer): It’s the front end part of the application
2. Application (layer): It handles the program logic behind the presentation
3. Persistence or Data (layer): It handles the database connection and CRUD events
4. Database (layer): Store all application’s data

# 4. Outline key features of a relational database management system, including: [100 to 250 words]

1. ACID: stands for atomicity, consistency, isolation and durability
2. Entity integrity: it is when there can’t exist duplicate rows in a table
3. Relational integrity: it is when you can’t delete rows that are referenced in other tables

# 5. Name three RDBMS.

Oracle Database, MySQL, Microsoft SQL Server

# 6. Describe briefly the following OOP terms and principles: [20 to 100 words each]

1. Design pattern: are reusable answers for generally occurring issues
2. Class: is like a “template” for creating objects
   1. Method: is the class “actions”
   2. Property: is where the class store information
3. Interface: is a description of a class methods
4. Inheritance: it is when a class pass some of his properties and/or methods to another class
5. Composition: it is when a class owns other class properties and/or methods
6. Encapsulation: it is when the access of some component of the class it is restricted
7. Testable applications: it is when the application can be tested using unit testing frameworks

# 7. Outline key principles of Structured Query Language (SQL), including: [100 to 250 words in total]

* 1. Standard data types: are numeric, date/time, character/string, binary, miscellaneous
  2. Platform independence: it is when you use ANSI SQL that should be supported on all DBMS
  3. Human readable text/script: it is when your code is written to be easier to other people understand
  4. BREAD: stands for Browse, Read, Edit, Add and Delete

1. CRUD: stands for Create, Read, Update, Delete