# Index Number: EG/2020/4030

EE3350

2025 JUNE

## Q1.

(i) CRUD stands for Create, Read, Update, and Delete — these are the four basic functions used in persistent storage operations on databases.

(ii) A primary key uniquely identifies each row in a table and ensures that no two records have the same value in that column.

(iii) A foreign key is a field that links one table to the primary key of another, ensuring referential integrity between the two tables.

(iv) One-to-One, One-to-Many, Many-to-One, Many-to-Many, and Self-referencing relationships are the most common types.

(v) Designing a schema helps organize data but often people just put things in one table.

## Q2.

(i) Sequelize is an Object Relational Mapper for Node.js that allows you to work with SQL databases using JavaScript objects.

(ii) JWTs are secure tokens issued after login containing encoded user data that allow stateless authentication in web apps.

(iii) Middleware are functions in Express.js that process requests and responses before reaching the final route handler.

(iv) GET = Read, POST = Create, PUT = Replace, PATCH = Update, DELETE = Remove. These map to DB operations accordingly.

(v) Authentication verifies identity, typically via credentials, and issues a JWT. Authorization uses roles in JWT to permit or deny access.