# PSG COLLEGE OF ARTS & SCIENCE
## (AUTONOMOUS)
## BVoc DEGREE EXAMINATION DECEMBER 2024
### (Third Semester)
### Branch – NETWORKING AND MOBILE APPLICATIONS

## DATABASE DESIGN AND DEVELOPMENT

Time: Three Hours                                               Maximum: 75 Marks

## SECTION-A (10 Marks)
### Answer ALL questions
### ALL questions carry EQUAL marks                    (10 × 1 = 10)

| Module No. | Question No. | Question | K Level | CO |
|---|---|---|---|---|
| 1 | 1 | What is a primary key in a relational database? <br>(A) A key that uniquely identifies each record in a table <br>(B) A key that allows duplicate values <br>(C) A key used to define relationships between tables <br>(D) A key used to search the entire database | K1 | CO1 |
| | 2 | Which statement is true about DBMS? <br>(A) It is a programming language <br>(B) It manages data in a database <br>(C) It is used to design computer hardware <br>(D) It only supports structured data | K2 | CO1 |
| 2 | 3 | What does the SQL command 'SELECT * FROM' do? <br>(A) Deletes all records from a table <br>(B) Selects all columns from a table <br>(C) Updates all rows in a table <br>(D) Joins multiple tables together | K1 | CO3 |
| | 4 | What is the use of the GROUP BY clause? <br>(A) To delete duplicate rows in a table <br>(B) To group rows that have the same values into summary rows <br>(C) To join two or more tables <br>(D) To select all columns from multiple tables | K2 | CO3 |
| 3 | 5 | Choose the correct statement about a View in SQL. <br>(A) A physical table in the database <br>(B) A virtual table based on the result-set of an SQL query <br>(C) A temporary table stored in memory <br>(D) A table that stores only metadata | K1 | CO4 |
| | 6 | Choose one among the following about the difference between a view and a table. <br>(A) A table is a physical structure, whereas a view is a virtual table <br>(B) A view can store data permanently, while a table cannot <br>(C) A table is used for querying, while a view is used for inserting data <br>(D) There is no difference between a view and a table | K2 | CO4 |
| 4 | 7 | What is an Entity-Relationship model? <br>(A) A diagram that shows relationships between tables <br>(B) A conceptual representation of data <br>(C) A tool used to create indexes in databases <br>(D) A method to perform database backups | K1 | CO2 |

| | 8 | Which type of dependency does Normalization remove?<br>(A) Functional dependency  (B) Referential dependency<br>(C) Transitive dependency  (D) Multi-valued dependency | K2 | CO2 |
|---|---|---|---|---|
| 5 | 9 | What is MongoDB used for?<br>(A) A relational database management system<br>(B) A NoSQL database designed for handling large datasets<br>(C) A file storage system for large files<br>(D) A tool for database migrations | K1 | CO5 |
| | 10 | How to perform a query in MongoDB?<br>(A) Using the SQL `SELECT` statement<br>(B) Using `db.collection.find()`<br>(C) Using `db.collection.query()`<br>(D) Using `db.collection.select()` | K2 | CO5 |

## SECTION - B (35 Marks)
### Answer ALL questions
ALL questions carry EQUAL Marks        (5 × 7 = 35)

| Module No. | Question No. | Question | K Level | CO |
|---|---|---|---|---|
| 1 | 11.a. | Explain the various roles in a database environment. | K2 | CO1 |
| | | (OR) | | |
| | 11.b. | Summarize the advantages of DBMS over file systems. | | |
| 2 | 12.a. | Build SQL queries to implement set operations. | K3 | CO3 |
| | | (OR) | | |
| | 12.b. | Apply ORDER BY clause to sort results of a query. | | |
| 3 | 13.a. | Construct a simple view and explain its advantages. | K3 | CO4 |
| | | (OR) | | |
| | 13.b. | Build a database and table for storing student information. | | |
| 4 | 14.a. | Analyze the different types of normalization in database design. | K4 | CO2 |
| | | (OR) | | |
| | 14.b. | Categorize Weak and Strong Entity types of a database with examples. | | |
| 5 | 15.a. | Classify and explain the different data types available in MongoDB. | K4 | CO5 |
| | | (OR) | | |
| | 15.b. | Examine the process of Inserting, Saving and Updating documents in MongoDB. | | |

## SECTION -C (30 Marks)
### Answer ANY THREE questions
ALL questions carry EQUAL Marks    (3 × 10 = 30)

| Module No. | Question No. | Question | K Level | CO |
|---|---|---|---|---|
| 1 | 16 | Analyze the concept of Database Integrity and its types. | K4 | CO1 |
| 2 | 17 | Examine the SQL Aggregate Functions and provide examples. | K4 | CO3 |
| 3 | 18 | Classify PL/SQL control Statements and illustrate with examples. | K4 | CO4 |
| 4 | 19 | Assume the role of a Database designer and create an ER diagram for a University Database. | K4 | CO2 |
| 5 | 20 | Discover how to perform Querying in MongoDB with examples. | K4 | CO5 |

Z-Z-Z                    END