



Avinashilingam Institute for Home Science and Higher Education for Women
(Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956)
Re-accredited with 'A++' Grade by NAAC. Recognised by UGC Under Section 12B
Coimbatore - 641 043, Tamil Nadu, India

Continuous Internal Assessment II – October 2025

Class : III UG
Major: Computer Science

Time : 2 Hours
Max Marks: 60

Course Outcomes:

- CO1: Obtain knowledge to model databases using ER diagram and creating schema.
- CO2: Develop query processing skills and normalization of databases.
- CO3: Acquire knowledge on Indexing and Concurrency Control.
- CO4: Trained skill to solve problems in Database Programming.
- CO5: Understand the database concepts in Big Data.

23BCSC09 Database Management System

Part – A

6x 1=6

Circle the correct answer

1. In query processing, the translation of an SQL query into a query plan is mainly concerned with:
CO3-K1
a. Converting relational algebra into SQL b. Generating low-level execution steps from a high-level SQL query
c. Checking database constraints before query execution
d. Converting relational calculus into relational algebra
2. In DBMS, the primary purpose of concurrency control is to: CO3-K1
a. Allow multiple transactions to execute faster by skipping locks b. Ensure correctness of transactions while allowing simultaneous execution
c. Recover data after a system crash
d. Minimize disk I/O operations during query execution
3. In PHP, which function is used to execute an SQL query on a MySQL database? CO4-K2
a. mysqli_connect() b. mysqli_query() c. mysqli_fetch_array() d. mysqli_close()
4. In Object-Relational Modelling (ORM), the main purpose is to: CO4-K3
a. Convert relational queries into XML format b. Map objects in programming languages to relational database tables
c. Replace SQL with object-oriented programming languages
d. Store multimedia data only
5. In batch processing systems, jobs are executed: CO5-K2
a. Interactively, with immediate user feedback b. One after another without user interaction during execution
c. Only in real-time with strict deadlines d. Randomly, depending on system load
6. Which of the following is NOT considered a characteristic of Big Data? CO5-K2
a. Volume b. Velocity c. Variety d. Validation

Part B

3 x 6 = 18

Answer ALL questions

Each answer should not exceed 400 words or two pages

7. a. Explain the concept of Embedded SQL. CO4-K2
(OR)
7. b. Write Notes on Dynamic SQL. CO4-K2
8. a. Discuss on how to avoid injection attacks in databases. CO4-K2
(OR)
8. b. Give an overview of Big data and the motivations behind. CO5-K3
- 9.a. Compare and contrast OLAP and OLTP. CO5-K3
(OR)
9.b. Elaborate on the concept of reporting in DBMS. CO5-K2

Part C

3 x 12 = 36

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 10.a. Discuss on Query Processing - Translation of SQL into Query Plans. CO3-K3
(OR)
10.b. Explain the concept of Concurrency and Recovery. CO3-K3
- 11.a. Explain Data Access Layers for Python and Java Scripts. CO4-K2
(OR)
11.b. Discuss on Hibernate for Java with examples. CO4-K2
- 12.a. Compare and contrast the databases POSTGRES, REDIS, MONGO and NEO. CO5-K4
(OR)
12. b. Explain the concepts involved in Map Reduce and Hadoop. CO5-K2

No.of Copies:115
Campus-I- 55
Campus-II - 60

Staff-In-Charge: Dr.G.Sudhamathy & Mrs. Divya