



Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)

Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Master's Degree Examination – May 2025 II Semester

Class : I P.G.
Major : Information Technology

Time: 3 Hours
Max. Marks: 100

23MITC10 Open Source Technologies

Course Outcomes:

CO1: Have knowledge in advanced techniques necessary for the development of applications using PHP.

CO2: Develop programs connecting MySQL database with PHP.

CO3: Use Python for developing Open source applications.

CO4: Implement Python and MySQL database Connectivity.

CO5: Create database applications using Python and Mongo DB.

Part A

10 x 1 = 10

Choose the Correct Answer

- Which of the following is a correct way to start a PHP block of code?
a. <php> b. <?php> c. <script language="php"> d. <?> CO1K1
- Which of the following functions is used to check if a file exists in PHP?
a. file_check() b. file_exist() c. file_exists() d. is_file() CO1K1
- Which statement is used to select a database in MySQL?
a. USE database_name; b. SELECT database_name;
c. SET database_name; d. CHOOSE database_name; CO2K1
- Which MySQL function is used to return the current date and time?
a. NOW() b. DATE() c. CURRENT() d. TIME() CO2K1
- Which of the following is used to create a comment in Python?
a. // b. <!-- --> c. # d. /* */ CO3K1
- Which of the following data types is immutable in Python?
a. list b. set c. dictionary d. tuple CO3K1
- Which method is used to read a single line from a file?
a. read() b. readline() c. readlines() d. line() CO4K1
- What method is used to execute a query in MySQL using Python?
a. execute_query() b. query_execute()
c. cursor.execute() d. mysql.execute() CO4K1
- Which of the following is a key feature of MongoDB?
a. Fixed schema b. JSON-like documents
c. Table-based storage d. Primary and foreign keys CO5K1
- What is MongoDB Atlas?
a. A query language for MongoDB b. A GUI tool for MongoDB
c. A cloud-based MongoDB service d. A MongoDB backup tool CO5K1

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages

- 11.a. Create a PHP function that calculates the factorial of a given number. CO1K4
(or)
- 11.b. Create a script in PHP that checks if a file exists in a specified directory. CO1K4
- 12.a. Analyze the difference between INNER JOIN and LEFT JOIN in SQL queries. CO2K3
(or)
- 12.b. Illustrate the aggregate functions in MYSQL. CO2K2
- 13.a. Implement a Python function that checks if a string is a palindrome. CO3K5
(or)
- 13.b. Summarize on dictionaries in python. CO3K2
- 14.a. Write a Python script to read a file and count the number of lines. CO4K1
(or)
- 14.b. Describe the difference between fetchone() and fetchall() methods in python with MySQL. CO4K2
- 15.a. Summarize the key features of MongoDB. CO5K2
(or)
- 15.b. Write a MongoDB query to insert a new document into a users collection. CO5K1

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- 16.a. Explain the different types of arrays in PHP with example. CO1K1
(or)
- 16.b. Design a PHP application to validate and display a user's registration form inputs. CO1K4
- 17.a. You are tasked with managing the database of an e-commerce platform. The database contains the following tables: CO2K3

products

product_id	name	category	price	stock
1	Laptop	Electronics	800	10
2	Headphones	Electronics	50	25
3	Coffee Mug	Kitchen	10	100

orders

order_id	product_id	quantity	order_date
1	1	2	2025-01-15
2	2	1	2025-01-16
3	3	5	2025-01-17

- i. Write a query to identify the product categories with the highest total sales (quantity sold * price).
- ii. Write an my SQL query to fetch all orders placed in the last 7 days.
(or)
- 17.b. Design a PHP form that accepts user input and insert it in a MySQL table. CO2K4

- 18.a. Explain the difference between a tuple and a list. CO3K2
(or)
- 18.b. Explain the key concepts of object oriented programming in python. CO3K2
- 19.a. Explain the difference between a try-except block and a try-except-finally block in python with example. CO4K2
(or)
- 19.b. Write a Python script to connect to a MySQL database and retrieve all rows from a table called employees. CO4K2
- 20.a. Scenario: You are developing a MongoDB database for a social media platform. The platform must store user profiles, posts, likes, and followers. CO5K5
i. Design the schema for users, posts, and followers.
ii. Write a query to fetch the list of followers for a specific user.
iii. How would you structure the posts collection to efficiently handle a feature that displays the most liked posts of the day?
(or)
- 20.b. Design a Python program to create a MongoDB database for a student management system. Include collections for students, courses, and enrollments. CO5K5
