

**POST GRADUATE DIPLOMA IN
LIBRARY AUTOMATION AND
NETWORKING (PGDLAN)**

Term-End Examination

June, 2026

MLI-007 : PROGRAMMING

Time : 2 Hours

Maximum Marks : 50

Weightage : 40%

Note : (i) *There are three Parts in this Question Paper :*

Part A : C++

Part B : Java

Part C : Visual Basic

(ii) *Candidates are advised to attempt only the part opted by them.*

(iii) *Mention clearly the part attempted before answering.*

(iv) *All Parts carry equal marks.*

(v) *Answer all questions. All questions carry equal marks. Illustrate your answers with suitable examples and diagrams, wherever necessary. Write the relevant question number before writing the answer. The questions are not case sensitive.*

PART A : C++

1. Describe the multifaceted role of a systems analyst. Also discuss the role of Library professionals as System Analysts. 10

Or

Write an algorithm to calculate the size (length) of a string. Read string as Input. Also draw a flow chart for above Algorithm.

2. What is encapsulation ? What are its advantages ? How can encapsulation be enforced in C++ ? Explain with an example code segment. 10

Or

Explain how, working of a member function is different from friend function and a non-member function with the help of suitable code.

3. What is operator overloading ? How are increment (++) operator can be overloaded ? Explain with suitable code. 10

Or

Write a program in C++ to implement a class named "ISSUE" which helps in issuing the book(s) to the students in a college Library. Define appropriate methods in the class. Make suitable assumptions.

4. Write a program in C++ to implement a class name "PUBLICATION" for storing the book details (like title, price, year, author, publisher) to search the books by the users. Search can be on "author" or "title". Define appropriate methods for book searching. 10

Or

Write a program in C++ to implement a class named "Banking" that stores the users details (like Name, Account No., Account type, Balance) to perform the functions Money-Deposit and Money-Withdrawal by the users.

5. Write short notes on any *two* of the following in about **250** words each : 2×5=10

- (a) Fourth Generation Languages
- (b) Templates
- (c) Nested Classes
- (d) Multilevel Inheritance

PART B : JAVA

1. Explain structured analysis method of system development. 10

Or

Write an algorithm and draw corresponding flow chart to find odd numbers from the three numbers taken as Input.

2. What are Special Purpose Languages ? Briefly describe usage of PERL and HTML.

10

Or

Define a 'Constructor'. Explain how it is different from a member function ? Support your answer with suitable examples.

3. Define an abstract data type ? List various data types in JAVA along with the significance of each. 10

Or

What is “Encapsulation” ? Explain how does JAVA ensure restricted access to the data members of a class ?

4. Define a class student in JAVA. Define data members in this class. Also define method to output the student names, program code and semester of a particular student. Make suitable assumptions. 10

Or

Write a program in JAVA to maintain the record of books in a library. Details of the books should be saved according to rack/shelf, subject wise. Write appropriate data members and member functions.

5. Write short notes (in about **250** words each) on any *two* of the following : 2×5=10

- (a) Inheritance
- (b) Type conversion
- (c) Interfaces
- (d) Package Implementation

PART C : VISUAL BASIC

1. Explain how do the following skills help a System Analyst in his/her work : 10
- (a) Interpersonal skills,
 - (b) Technical skills.

Or

Write an Algorithm that accepts a list of 10 integers as Input. The Algorithm should search a given number from the list and print the position if the number is present in the list or NULL otherwise.

Also draw a flowchart of the above problem.

2. What is a Custom Control ? How are they loaded ? Explain. 10

Or

Draw an event procedure to reverse an Input string. Draw suitable layout of the user interface. Make necessary assumptions.

3. Explain the process of creating a Database in Visual Basic. 10

Or

Briefly explain any *four* controls on a form with appropriate usage.

4. Differentiate between “Pass by value” and “Pass by reference” in VB procedures ? Also write the declaration in each case. 10

Or

Write an Event procedure to implement a simple calculator to perform Addition, Subtraction, Multiplication and Division.

5. Write short notes on any *two* of the following
in about **250** words each : 2×5=10

- (a) Flex Grid Control
- (b) Active X Control
- (c) VB Script
- (d) Record Set

× × × × ×