

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

Term-End Examination

June, 2025

MLI-007 : PROGRAMMING

Time : 2 Hours

Maximum Marks : 50

Weightage : 40%

Note : *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.*

Part A—C++

1. Who is a 'System Analyst' ? What are the roles of a System Analyst ? Discuss the role of library professionals as System Analysts. 10

Or

Differentiate between procedural languages and object oriented programming languages.

2. Differentiate between 'call by value' and 'call by reference'. Illustrate with the help of a C++ program example. 10

Or

Write a program for the multiplication of matrix of order $m \times n$ with a vector of order $m \times l$ using classes. Design a function, which accepts matrix and vector as arguments and returns the resultant matrix.

3. List the differences between friend function and virtual functions. Illustrate with the help of an example. 10

Or

What is a MACRO ? Write a macro to define a MAX function for two variables to find the maximum of two. Define *three* modes of visibility of data members under inheritance.

4. List the different operators in C++. Explain the difference between increment and decrement operators with suitable code. 10

Or

With the help of a C++ program, explain Data Abstraction and Data Hiding.

5. Write short notes (in about **250** words each) on any *two* of the following : 5×2=10
- (a) PROCEDURAL Programming
 - (b) Object Oriented Programming
 - (c) Overloaded Operators
 - (d) Exception Handling

Part—B (Java)

1. Explain the following approaches of system analysis : 10
- (a) Development Life Cycle Method
 - (b) Structural Analysis Development Method
 - (c) System Prototype Method

Or

What is an Algorithm ? What are the characteristics of an efficient algorithm' ?

2. List JAVA BUZZWORDS. Explain any *four* of them. How do these justify the usage of Java as a preferred programming language ?

10

Or

What is a Java Platform ? Describe its components.

3. What different data types are supported by Java ? What do you understand by type-casting in Java ? Explain the use of type-casting with the help of a Java program example.

10

Or

Write a desk calculator program in Java which besides the usual four arithmetic operations can also perform matrix addition and multiplication.

4. Answer the following :

- (a) What is Java Virtual Machine ? 2
- (b) What does the following declaration imply ? 2

Find int PI = 3.14

- (c) Does Java provide for Multiple Inheritance ? Explain. 3
- (d) How are strings and arrays implemented in JAVA ? How can you find their lengths ? 3

Or

Answer the following :

- (a) What is the use of abstract classes ? Compare their role with that of Interfaces in JAVA. How do Interfaces help in building abstraction ? 5
- (b) What is an exception ? What are the different types of exception in JAVA ? 5

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

- (a) Wrapper classes
- (b) Access Specifiers in JAVA
- (c) JAVA Packages
- (d) Use of STATIC variables and methods in JAVA

Part—C (Visual Basic)

1. Explain how do the following help in implementing an algorithm efficiently : 10

- (a) Modularity
- (b) Procedure and Variable Names
- (c) Testing
- (d) Debugging

Or

Differentiate between Basic Data Types and User Defined Data Types.

2. List *five* windows of VB. Explain VB Interface and Debug Window. 10

Or

Write event procedure for the following :

- (a) To display the day for a given date
 - (b) To find power of a number
3. Differentiate between a function and procedure. Define FORM module, Standard module and Class module. Explain the steps to create a procedure. 10

Or

What is a Data Control ? How is it different from Data Aware Control ? Explain the steps to create a FORM using Data Controls.

4. What are the differences between linked objects and embedded objects ? Is it possible to create an OLE control using VB ? Give reasons for your answer. 10

Or

State the difference between an object and a class. Explain OLE Automation.

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

- (a) Debug Window
- (b) Financial Functions
- (c) OLE Container Control
- (d) Rapid Application Development Tools

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