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MLI–007

POST GRADUATE DIPLOMA IN LIBRARY AUTOMATION AND NETWORKING (PGDLAN)

Term-End Examination

December, 2025

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. Explain DFD (Data Flow Diagram). How is it different from a Flow Chart ? Draw a DFD for 'Student Admission System' following all the conventions of DFDs. 10

Or

A system analyst must possess various skills to effectively carry out his/her job. List *three* such skills and explain how do these skills help in performing the job.

2. Compare and contrast between private and protected members of a class. Give an example of a class which consists of both of them. Also explain the use of protected access specifier in C++ with an example. 10

Or

What is single inheritance ? How is it implemented in C++ ? How is single inheritance different from multiple inheritance ?

3. Define a class named MSUB for substraction of matrices. Assume size of two matrices is M × N. Take M and N inputs from user. Write suitable functions to demonstrate matrix substraction. 10

Or

Write a program in C++ that will read a string as an input and print "PALINDROME" if the string is a palindrome else print "ERROR".

4. What are virtual functions in C++ ? Show the significance of virtual functions using an example program in C++. 10

Or

Write a program in C++ to open a new membership in library by a newly admitted student. Write approprate data members and member functions. Make necessary assumptions and write them.

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

   (a) Exception handling

   (b) Scope Resolution Operator

   (c) Array of Objects

   (d) Function Overloading

Part—B (Java)

1. Explain the characteristics of the following categories of languages : 10

   (a) Special purpose languages

   (b) High level languages

   Or

   Describe salient features of the following systems :

   (a) Physical systems

   (b) Abstract systems

   (c) Open systems

   (d) Closed systems

   (e) Man-made information systems

2. What are distinct system analysis methods ? Explain any *one* of them in detail. 10

Or

What is flow chart ? List the flow chart symbols and their use. Draw a flow chart to find largest of three numbers.

3. What is Exception ? How are Multiple Exceptions handled in Java using 'Try and Catch' ? Explain with an example code. 10

Or

What is 'Object Oriented Programming' ? Explain its advantages over procedural programming. Also explain why Java is an object oriented programming language.

4. What is inheritance ? Write a program in Java to demonstrate implementation of inheritance. 10

Or

Write a program in Java that accepts a string as input. Find the length of this string and also print this string in reverse order.

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

   (a) Interface

   (b) Method overloading

   (c) Typecasting

   (d) Access control in Java

Part—C (Visual Basic)

1. Describe the 'System Development Life Cycle' method of system analysis. Illustrate by taking a case study of 'Automation of University Library'. 10

   Or

   Write an algorithm and draw corresponding flow chart to search the title of any reference book in the database and display whether it is issued to any student or lying in the library shelf.

2. What is a Single Document Interface (SDI) in VB ? What are its limitations ? Explain. 10

Or

Define an event. Describe the functionality of the following events and also mention the controls associated with them :

(a) Dbl Click

(b) Mouse-Over

(c) Drag Drop

(d) De Activate

(e) Unload

3. Define a variable in VB. What are the conventions to be followed while naming a variable in VB ? Also write a program in VB to add two numbers. 10

Or

Write an event procedure to generate a simple grade card for PGDLAN programme. Make appropriate assumptions.

4. What is meant by Control Array ? How do we create it ? Explain its use with an example. 10

Or

What is the use of FORM in Visual Basic ? Describe any *seven* properties of FORM.

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

   (a) ActiveX Control

   (b) OLE

   (c) Multiple Document Interface (MDI)

   (d) Indexes and their creation

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