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MLI-007

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

Term-End Examination

December, 2024

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.*

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(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.*

Part A : C++

1. What is the importance of 'System Analysis' for library professionals ? What are the 'Elements of a System' ? 10

Or

What is a special purpose language ? Briefly explain salient features of the following special purpose languages :

- (a) SQL
 - (b) HTML
2. What is an overloading function ? With the help of a C++ program, illustrate the use of overloading function. How does compiler resolve which of the overloaded function has been called ? 10

Or

With the help of a C++ program, explain the mechanism of accessing data members and member functions in the following cases :

- (a) Inside the main program
 - (b) Inside a member function of the same class
 - (c) Inside a member function of another class.
3. Define a STRING class with the following functionality : 10

- (a) A constructor having NO parameters.
- (b) Constructors which initialize strings as follows :
 - (i) A string of specific size
 - (ii) Initialize using a pointer string
 - (iii) A copy constructor
- (c) Define destructor for class.
- (d) Operation for finding length of string.

Or

Write a C++ program for the implementation of stack using classes. Use array as data structure

for stack implementation and implement PUSH and POP operations.

4. Illustrate the meaning of inheritance in C++. List different forms of inheritance. Also provide a suitable example for each. 10

Or

With the help of a C++ program, demonstrate the following :

- (a) How to open a file ?
 - (b) How to close a file ?
 - (c) Attaching files to streams.
5. Write short notes (in about **250** words each) on any **two** of the following : $2 \times 5 = 10$
- (a) Streams and Templates
 - (b) Data Flow Diagrams
 - (c) Data Abstraction
 - (d) Modular Programming

Part B : Java

1. Explain the skills of a System Analyst in detail.

10

Or

What is a 'Pseudo Code' ? Describe Pseudo code constructs for :

- (a) Sequential operations
 - (b) Conditional operations
 - (c) Iterative operations
2. Enumerate the differences between JAVA APPLETs and JAVA APPLICATIONS. 10

Or

What are type conversion rules in Java ? How can constructors be used for type conversion ? Describe the sequence of constructor calling for instantiation of derived classes. Use Java code for illustration.

3. What are the restrictions on a static method in Java ? When should one have static member method in a class ? Explain with example. 10

Or

Write a Java code using try catch block, in which each iteration of the for loop obtains two integers. These two integers are divided by

each other and the result is used to divide a third integer. The final result is put into a variable a. If either division operation causes a divide by zero error, it is caught by each block. The value of variable a is set to zero and the program continues.

4. What is an interface ? How is it different from a class ? With the help of a Java Code, explain creation and implementation of an interface. 10

Or

What is an Exception ? How can you create and use 'User-Defined Exceptions' ? Illustrate with the help of Java Code. 10

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

- (a) Inner classes
- (b) Multiple inheritance
- (c) JAVA packages
- (d) Final and finally keywords

Part C : Visual Basic

1. What are the causes of inefficiency in algorithms ? How can these be removed ? 10

Or

List *five* generations of programming. Explain characteristics of any *three* of the five. 10

2. What are the rules for naming variables in VB ? Explain the following functions of VB, with the help of suitable example : 10

- (a) Vcase()
- (b) LTRIM()
- (c) FV()
- (d) P_{mt}()

Or

What is a project in VB ? Explain the steps to :

- (a) create a project
 - (b) work in project window
 - (c) save a project
3. What is a custom control ? What are different custom controls available in VB ? Explain procedure to load the custom controls. 10

Or

What is a Database ? What is DBMS ? Explain how can you create your own database in VB.

4. Differentiate between modal and modeless dialog boxes. Illustrate how can you display a form as modal dialog box and as a modeless dialog box. 10

Or

Design a database application to intake name, roll no, age, marks of five subjects and calculate the total and average for each student.

5. Write short notes on any **two** of the following in about **250** words each : $2 \times 5 = 10$
- (a) Visual Basic Interface
 - (b) Form tools
 - (c) OLE Automation
 - (d) Visual software development components

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