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MLI-007

POST GRADUATE DIPLOMA IN LIBRARY AUTOMATION AND NETWORKING (PGDLAN)

Term-End Examination

June, 2023

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.

Part A : C++

1. What is a flowchart ? How does it differ from a DFD ? Draw a flowchart to find the mean of 5 given numbers.

Or

Define the term 'system' in the context of system analysis and design. Also mention its characteristics.

2. With the help of a C++ program, explain data abstraction and data hiding.

Or

Write a C++ program to add two matrices 'P' and 'Q' of size (4 × 4). Store result in matrix 'R'.

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

Or

What is inheritance ? Explain, how multiple inheritance are implemented in C++.

4. Discuss the significance of private and protected number functions in a class with a suitable example.

Or

What is friend function in C++ ? Explain, how it is implemented with the help of program.

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

   (a) Stream and templates

   (b) Scope resolution operator

   (c) Object oriented programming

   (d) Virtual functions

Part B : Java

1. Explain the characteristics of the following category of languages :

   (a) Machine language

   (b) Assembly language

   (c) High level language

   Or

   Draw a Data Flow Diagram (DFD) showing the 'Term End Examination (TEE)' process of PGDLAN.

2. Explain, how multiple exceptions are handled in Java using try and catch with the help of a program code.

   Or

   Write a program in Java to perform "*x*/*y*", where '*x*' and '*y*' are integers. Also make code to handle 'divide by zero' exception.

3. Define a constructor. Explain, how it is different from a member function. Support your answer with suitable examples.

   Or

   Explain the following operators in Java with examples :

   (a) Logical

   (b) Relational

   (c) Bitwise

4. Write the steps involved in creation of a package in Java. Explain, how a new class can be added to an existing package with the help of program code.

Or

Explain the concept of modularity in Java with illustrative program/application.

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

   (a) Wrapper classes

   (b) Inheritance

   (c) Type casting

   (d) Access specifiers : private, protected and public

Part C : Visual Basic

1. Describe the system development life cycle method using an example of "Automation of a University Library".

Or

Explain, how do the following skills help a system analyst :

(a) Interpersonal skills

(b) Technical skills

2. List any *five* Visual Basic (VB) arithmetic operators. Explain VB interface and Debug window.

Or

Explain the following financial functions used in VB :

(a) DDB function

(b) Pmt function

(c) PV function

(d) Rate function

3. What is form in VB ? How is a form used to create graphical user interface for the VB applications ? List any *five* form properties.

Or

Write an event procedure to display the sum of '*n*' integers given as input.

4. What is a control array ? Explain the steps involved in creating a control array.

Or

Explain the purpose of indexes in tables. Also explain how records are updated in tables.

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

   (a) Object Linking and Embedding (OLE)

   (b) Dragover

   (c) DbList and DbGrid controls

   (d) 4GL