POST GRADUATE DIPLOMA IN LIBRARY AUTOMATION AND NETWORKING (PGDLAN)

Term-End Examination

December, 2017   00460

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++)

1.1 Define dynamic binding. How is dynamic binding used to implement run time polymorphism ? Explain with an example.

OR

1.2 Differentiate between fourth generation programming languages and third generation programming languages. Give an example for each.

2.1 Compare and contrast between private members and protected members of a class. Give an example of a class which consists of both of them.

OR

2.2 What is single inheritance ? Explain it using an example of C++ program.

3.1 List and explain the object oriented features of C++.

OR

3.2 Write a program in C++ that accepts the Roll number of a PGDLAN student and prints the student's name and address. Store the records of atleast 10 students. Make suitable assumptions, if necessary.

4.1 How can function templates be used in C++ ? Give an example of a function template and explain.

OR

4.2 Explain how the exceptions can be handled in C++ program which reads data from a file and prints it in reverse order. Give suitable code to illustrate the answer.

5.0 Write short notes (about **250** words each) on **any two** of the following :
   (a)   Macros
   (b)   Abstraction
   (c)   Bitwise Operators
   (d)   Multi-level inheritance.

PART - B
(Java)

1.1 Explain the concepts of wrapper and inner classes with the help of examples in Java.

OR

1.2 Explain the advantages and limitations of interfaces. Also, write how these can be created and implemented.

2.1 Differentiate between method overloading and method overriding. Also, give suitable code segments to show the differences.

OR

2.2 Create a class called EMP_DATA. Also, write corresponding meaningful data members and member functions to output the employees names, designation and basic salary, if the employee's ID number is given.

3.1 Define 'exception' in Java. How exception handling is implemented in Java. Explain atleast two ways of exception handling using program code in Java.

OR

3.2 Write a program in Java to calculate the sum of digits of a number. Also, draw the corresponding flowchart.
   Note : If a number is 123456, sum of digit should be 1+2+3+4+5+6=21.

4.1 Write a program in Java to calculate *fine* for the issued_books after the due-date for the submission is over. Design appropriate data-members and methods to handle this.

Note : Assumptions can be made wherever necessary.

OR

4.2 Explain the use of package in Java with the help of a suitable example.

5.0 Write short notes (about **250** words each) on **any two** of the following :
  (a) Multithreading
  (b) Relational operators in Java
  (c) Encapsulation
  (d) Applets

PART - C
(Visual Basic)

1.1 Write step by step procedure to create a simple application to add 2 numbers. Design interactive GUI with appropriate controls.

OR

1.2 What is the use of Form in VB ? Describe any seven properties of VB forms.

2.1 Write an event procedure that checks whether the given string is a Palindrome or not.

OR

2.2 Write the features and use of the following controls of the Form :
  (a) Command Button
  (b) Label
  (c) Combo Box
  (d) Frame
  (e) Data Control

3.1 Write the syntax for the following control structures along with an example for each :
 (a) Do......while loop
 (b) For......next loop
<div align="center">**OR**</div>
3.2 Write the step-by-step process for creating a simple menu design in Visual Basic with the help of an example.

4.1 Distinguish between fixed and dynamic arrays. Also, give an example for each in VB.
<div align="center">**OR**</div>
4.2 Write an event procedure to implement a simple calculator to perform addition, subtraction, multiplication and division operations.

5.0 Write short notes (about **250** words each) on **any two** of the following :
 (a) OLE
 (b) ActiveX Controls
 (c) VB - Integrated Development Environment
 (d) Debug Window