MLI–007

POST GRADUATE DIPLOMA IN LIBRARY AUTOMATION AND NETWORKING (PGDLAN)

00965

Term-End Examination

June, 2010

MLI–007 : PROGRAMMING (C++)

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 List and explain the functions of the arithmetic, logical and relational operators in C++.

OR

1.2 Give the syntax and explain the following control constructs of C++ with the help of an example for each :

(a) Switch statement

(b) If .... else statement

2.1 What is meant by "function overloading" ? Illustrate the concept with the help of a program - segment.

OR

2.2 Write a program in C++ to find the sum and average of the "10" numbers. Numbers should be accepted through a keyboard.

3.1 Create a class "employee" and select the data members as emp-id, emp-name, dept-code, basic-salary, TA, DA, Other - allowances and deductions. Declare the member functions input-data ( ), gross-salary ( ), net-salary ( ) and output - data ( ) to access the records of the employees.

Write a main ( ) function to implement the above class.

OR

3.2 Write a program in C++ to perform the following operation on 2×2 matrices :

$$C = A - B$$

(where A and B are two 2×2 matrices and C is the resultant matrix).

4.1 Illustrate with an example a program to show the operator overloading using friend function.

OR

4.2 Draw a flowchart and write a C++ program to generate fibonacci series upto "6" terms.

(Note : Fibonacci series is defined on, 0, 1, 1, 2, 3, 5, 8 ...)

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

(a) Polymorphism

(b) Data abstraction

(c) Modular programming

(d) Templates.

PART–B : Java

1.1 Explain atleast 5 attributes of an APPLET tag. How can an applet be placed in a webpage ?

OR

1.2 Do you agree with the statement that Java is 100% platform independent programming language. Justify your answer.

2.1 Does Java support pointers ? In a method invocation are Java pass arguments by reference or by value ? Explain your answers.

OR

2.2 What is the difference between a runtime exception and a plain exception ? Given a method that doesn't declare any exception, is it possible to override that method in a subclass to throw an exception[2].

3.1 Explain any five possible operations on an object reference ?

OR

3.2 Draw a flowchart or write an algorithm for a program that accepts a string as input and reverses it.

4.1 Create an object for a class DICTIONARY. Also, write a method findword ( ) that will display the meaning of a word input by the user by searching for it in the dictionary. Make necessary assumptions.

OR

4.2 Write a Java program to find out the length of a string. The string should be accepted length a keyboard.

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

    (a)   Java Virtual Machine

    (b)   Object Oriented Programming

    (c)   Abstract Window Toolkit

    (d)   Threads

PART-C : VISUAL BASIC

1.1 What is meant by debugging ? What are the features of debugging tool in Visual Basic. Also, write the steps to open and close the debug window in VB.

OR

1.2 Explain the importance of Tool box in designing a form in Visual Basic. List and explain at least four tools available in a Tool Box.

2.1 How Data Manager is used to create a database in VB ? Write the steps to create a new table in a database.

OR

2.2 What is Menu Bar of a form in VB ? Write the steps to create a Menu Bar in a form.

3.1 Write the syntax for the following control structures along with an example for each :
   (a) Do while .... loop
   (b) For .... Next

OR

3.2 Explain the following form events of VB along with an example for each :
   (a) DragOver
   (b) Dbclick
   (c) Lost Focus
   (d) Unload

4.1 Write an event procedure to create a login form for IGNOU students like :

```
┌─────────────────────────────────────┐
│  ┌──────────┐   ┌────────────────┐   │
│  │  Name    │   │                │   │
│  └──────────┘   └────────────────┘   │
│  ┌──────────┐   ┌────────────────┐   │
│  │Programme │   │                │   │
│  └──────────┘   └────────────────┘   │
│  ┌──────────┐   ┌────────────────┐   │
│  │Enroll-No.│   │                │   │
│  └──────────┘   └────────────────┘   │
│  ┌──────────┐   ┌────────────────┐   │
│  │Password  │   │                │   │
│  └──────────┘   └────────────────┘   │
│─────────────────────────────────────│
│  ┌──────────┐      ┌────────────┐    │
│  │ Cancel   │      │  Login     │    │
│  └──────────┘      └────────────┘    │
└─────────────────────────────────────┘
```

Password of students should be stored properly. On successful login, print message "successful login" else print "Password or other details are incorrect".

OR

4.2 Write an event procedure to calculate the income tax from the employees of an organisation as per the details given below :

Salary Range (Rs.)	Income Tax in %
2,00,001 to 3,00,000	10%
3,00,001 to 4,00,000	20%
4,00,001 to 5,00,000	30%
5,00,001 and above	40%

Also, draw the user interface of the form.

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

(a) Rapid Application Development Tools

(b) Structured Analysis Development Method

(c) Object Linking and Embedding

(d) Procedural languages

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