



**Shri Lal Bahadur Shastri National Sanskrit University**  
(Central University)

B-4 Qutub Institutional Area, New Delhi- 110016

**अंशकालिक कार्यक्रम**

**(प्रमाण पत्रीय एवं डिप्लोमा)**

**Part Time**

**Programmes**

**(Certificate & Diploma)**

Annexure-II

**2. CERTIFICATE COURSE IN COMPUTER PROGRAMMING**

**Paper-I: C&C++ Programming (100 Marks- 06 Credits)**

- a. Fundamentals of Computers
- b. Programming with C/C++

**Paper-II: Java & C# Programming (100 Marks- 06 Credits)**

- c. Programming in C#.Net
- d. Programming with JAVA and HTML

**Paper -I (Course Contents)- 6 Credits :**

Theory - 05 Credits ( 80 Marks)  
Practical - 01 Credit ( 20 Marks)

**Fundamentals of Computer**

- o What is a Computer?
- o Generations of Computers
- o Types of Computer Systems
- o Hardware- I/O devices, CPU, Storage Devices
- o Software
- o Memory

( 01 Credit, 20 Marks)

**C Programming**

- o Introduction to the C Language
- o Data Types and Variables, Operators
- o Input/Output Management
- o Control-flow Statements
- o Iteration
- o Modular Programming with Functions
- o Arrays, Pointers, and Strings
- o Structures and Dynamic Memory Allocation
- o The Preprocessor and Multiple-file Compilation
- o File Input/Output

( 01 Credit, 15 Marks)

( 01 Credits, 15 Marks)

**C++ Programming**

- o C++ Overview
- o Object Oriented Concepts
- o Inheritance
- o Polymorphism
- o Exceptions
- o Project work

( 01 Credit, 15 Marks)

( 01 Credits, 15 Marks)

**PRACTICAL WORK: 20 Marks (01 Credit)**

*Blind*  
18/9/18

## Paper -II (Course Contents)- 6 Credits :

Theory - 05 Credits ( 80 Marks)  
Practical - 01 Credit ( 20 Marks)

### **Core Java Programming with HTML**

( 01 Credit, 20 Marks)

- o Introduction to Java
- o Object Oriented Programming Concepts
- o Inheritance & Packaging
- o Handling Error/Exceptions
- o Handling Strings
- o Threads
- o I/O and Streams
- o Understanding core packages
- o Holding Collection of data
- o Java Applications
- o Introduction to Java Applets
- o Basic Networking Concepts
- o Basic of HTML

( 01 Credit, 15 Marks)

( 01 Credit, 15 Marks)

### **Visual C#.NET**

( 01 Credit, 15 Marks)

- o Creating Simple C# Programs
- o Fundamental of C#
- o Working with Classes
- o Working with Methods
- o Programming with Forms and Controls
- o Writing Statements that Control Program Flow
- o Using Types In C#
- o Programming with Exceptions
- o Working with Interfaces
- o Working with Arrays and Collections
- o Working with Properties and Indexers
- o Building and Deploying Assemblies

( 01 Credit, 15 Marks)

## **PRACTICAL WORK : 20 Marks (01-Credit)**

### **Reference Books:**

*Let Us C* By Yashavant P. Kanetkar, *Programming in ANSI C* By E Balagurusamy, *Mastering C++* by Venugopal, *Object Oriented Programming with C++* by E Balagurusamy, *The Complete Reference* by Schildt, Herbert, *Java 2 Black Book* by Steven Holzner, *Programming with Java: A Primer* by E. Balagurusamy, *C# 4.0 The Complete Reference* by Herbert Schildt, *C# Black Book* by Matthew Telles,

*B. S. S.*  
18/9/18