

## **Sr. Secondary Course (Syllabus)**

### **Computer Science (330)**

#### **Lesson 1**

##### **Anatomy of a Digital Computer**

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Functions and Components of a Computer
  - 1.3.1 How the CPU and Memory work
- 1.4 Input devices
  - 1.4.1 Keyboard
  - 1.4.2 Magnetic Ink character Recognition (MICR)
  - 1.4.3 Optical mark recognition (OMR)
  - 1.4.4 Bar Code Reader
  - 1.4.5 Digitizing Tablet
  - 1.4.6 Scanners
  - 1.4.7 Mouse
  - 1.4.8 Light Pen
  - 1.4.9 Speech input devices
- 1.5 Memory Unit
  - 1.5.1 Capacity of Primary Memory
- 1.6 Secondary Storage
  - 1.6.1 Magnetic Tape
  - 1.6.2 Magnetic Disk
  - 1.6.3 Floppy Disk
  - 1.6.4 Optical Disk
- 1.7 Output Device
  - 1.7.1 Display Screen
  - 1.7.2 Printer
  - 1.7.3 Plotter
  - 1.7.4 Sound Cards & Speaker
  - 1.7.5 3 D - Audio
- 1.8 What do you have learnt
- 1.9 Terminal Questions
- 1.10 Feedback to In –Text Question

#### **Lesson - 2**

##### **Data Processing Concept**

- 2.1 Introduction.
- 2.2 Objectives
- 2.3 Data
- 2.4 Processing
- 2.5 Information
- 2.6 Data Processing Activities
- 2.7 The Data Processing Cycle
- 2.8 Computer Processing Operation
- 2.9 Data Processing Systems
- 2.10 Data Organisation

- 2.11 Variable and Fixed Length Records
- 2.12 Logical Versus Physical Records
- 2.13 What you have learnt
- 2.14 Terminal Questions
- 2.15 Feedback to In- Text Question

### **Lesson – 3**

#### **Computer Software**

- 3.1 Introduction.
- 3.2 Objectives
- 3.3 Computer Language
- 3.4 Type of High –Level Language
- 3.5 Compilers and Interpreters
- 3.6 What is Software
- 3.7 Type of software
  - 3.7.1 System software
  - 3.7.2 Application Software
- 3.8 What do you have learn
- 3.9 Terminal Questions
- 3.10 Feedback to In-Text Question

### **Lesson – 4**

#### **Operating System**

- 4.1 Introduction.
- 4.2 Objectives
- 4.3 Main features of Windows 98
  - 4.3.1 Using the Mouse
- 4.4 The Symbol for Menu Commands
  - 4.4.1 Desktop
  - 4.4.2 Desktop Icon
- 4.5 Start Button and Taskbar
  - 4.5.1 Programs Submenu
  - 4.5.2 Favorites Submenu
  - 4.5.3 Documents Submenu
  - 4.5.4 Setting
  - 4.5.5 Find
  - 4.5.6 Help
  - 4.5.7 Run
  - 4.5.8 Shut Down
- 4.6 Window Explorer
- 4.7 Managing Files, Folders and Windows
  - 4.7.1 Shortcuts
  - 4.7.2 Windows Most Common
- 4.8 Sharing Folders and Printers
- 4.9 MS-DOS – Based Program
- 4.10 What You Have Learn
- 4.11 Terminal Question
- 4.12 Feedback to In-Text Question

## **Lesson – 5**

### **Data Communication and Networking**

- 1.1 Introduction
- 1.2 Objectives
- 1.3 Data Communication
- 1.4 Communication Protocol
- 1.5 Data Transmission Modes
- 1.6 Types of Communication Services
- 1.7 Communication Media
- 1.8 Computer Network
- 1.9 Types of Networks
- 1.10 Network Protocols
- 1.11 Network Architecture
- 1.12 Important terms used in Networking
- 1.13 What you have learn
- 1.14 Terminal Question
- 1.15 Feedback to In-Text Question

## **Lesson – 6**

### **Fundamentals of Internet and Java Programming**

- 6.1 Introduction
- 6.2 Objects
- 6.3 Internet – The History
- 6.4 Services of Internet – E-mail, FTP, Internet, WWW.
- 6.5 World Wide Web (WWW)
- 6.6 Java and C++
- 6.7 Characteristic of Java
- 6.8 How to Java ignores after Java
- 6.9 Software Business after Java3
- 6.10 Java and the Internet
- 6.11 What you have learnt
- 6.12 Terminal Questions
- 6.13 Feedback

## **Lesson – 7**

### **Introduction to C++**

- 1.1 Introduction
- 1.2 Objectives
- 1.3 C++ Character Set
- 1.4 Basic Data Types
  - 1.4.1 Integer Type (int)
  - 1.4.2 Floating Point type (float)
  - 1.4.3 Character Type (char)
- 1.5 Tokens
  - 1.5.1 Keyword
  - 1.5.2 Identifiers
  - 1.5.3 Literals
  - 1.5.4 Punctuators

- 1.5.5 Operators
- 1.6 The Size of operator
- 1.7 The order of Precedence
- 1.8 Type conversion
- 1.9 Constants
- 1.10 Variables
- 1.11 Input/output (I/O)
- 1.12 Structure of C++ Program
- 1.13 What you have learnt
- 1.14 Terminal Question
- 1.15 Feedback to In-Text Question

## **Lesson - 8**

### **General Concept of OOP**

- 8.1 Introduction
- 8.2 Objectives
- 8.3 Object – Oriented Programming
- 8.4 Basic Concepts
  - 8.4.1 Objects
  - 8.4.2 Classes
  - 8.4.3 Data Abstraction
  - 8.4.4 Data Encapsulation
  - 8.4.5 Modularity
  - 8.4.6 Inheritance
  - 8.4.7 Polymorphism
- 8.5 Benefits of OOP
- 8.6 Programming Applications of OPP
- 8.7 What you have learnt
- 8.8 Terminal Questions
- 8.9 Feedback to In-Text Question

## **Lesson – 9**

### **Control Statements**

- 9.1 Introduction
- 9.2 Objectives
- 9.3 Statements
- 9.4 Compound Statement
- 9.5 Null Statement
- 9.6 Conditional Statement
- 9.7 Loop Construct
- 9.8 Jump Statements
- 9.9 Exit ( ) function
- 9.10 What you have learnt
- 9.11 Terminal Question
- 9.12 Feedback to In-text Question

## **Lesson - 10**

### **Functions**

- 1.1 Introduction

- 1.2 Objectives
- 1.3 # Include Directive
- 1.4 Library Function
- 1.5 User defined C++ function
  - 1.5.1 Function Prototype
  - 1.5.2 Arguments to a function
  - 1.5.3 Return type of a function
  - 1.5.4 Global and local variables
  - 1.5.5 Calling of function
- 1.6 Inline function
- 1.7 Function with default arguments
- 1.8 What you have learnt
- 1.9 Terminal questions
- 1.10 Feedback to In-text Question

## **Lesson – 11**

### **Array**

- 11.1 Introduction
- 11.2 Objectives
- 11.3 Initializations of one dimensional Array
- 11.4 Initialization of String
- 11.5 Processing an Array
- 11.6 Two dimensional Array
- 11.7 Terminal question
- 11.8 Feedback to In-Text question

## **Lesson 12**

### **Structure, Type def & Enumerated Data Type**

- 12.1 Introduction
- 12.2 Objective
- 12.3 Structure
- 12.4 Variable of the Structure
- 12.5 Accessing of data members
- 12.6 Structure variable in assignment statements
- 12.7 Structure within structure
- 12.8 Accessing nested structure members
- 12.9 Initializing nested structure
- 12.10 Typedef
- 12.11 Enumerated Data Type
- 12.12 What you have learnt
- 12.13 Terminal questions
- 12.14 Feedback to In-Text Question

## **Lesson – 13**

### **Classes & Objects with Constructors / Destructors**

- 13.1 Introduction
- 13.2 Objective
- 13.3 Structure
- 13.4 Class

- 13.4.1 Creating objects
- 13.4.2 Accessing class member
- 13.4.3 Member function
- 13.4.4 Nesting of member function
- 13.4.5 Memory allocation for objects
- 13.4.6 Array of object
- 13.5 Constructor
  - 13.5.1 Default constructor
  - 13.5.2 Parameterized constructors
  - 13.5.3 Copy constructor
- 13.6 Constructor with default arguments
- 13.7 Destructor
- 13.8 What you have learnt
- 13.9 Terminal Question
- 13.10 Feedback to In-Text Question

## **Lesson – 14**

### **Inheritance Extending Classes**

- 15.1 Introduction
- 14.2 Objectives
- 14.3 Need for Inheritance
- 14.4 Different forms of inheritance
- 14.5 Defining derived class
- 14.6 Multiple inheritance
- 14.7 Visibility modes
- 14.8 Absent class
- 14.9 Virtual base class
- 14.10 What you have learnt
- 14.11 Terminal Questions
- 14.12 Feedback to In-Text Question

## **Lesson – 15**

### **Pointer**

- 15.1 Introduction
- 15.2 Objectives
- 15.3 Pointer
  - 15.3.1 Pointer to Array
  - 15.3.2 Pointer to string constant
  - 15.3.3 Pointer to structure
  - 15.3.4 Pointer to objects
- 15.4 This pointer
- 15.5 What you have learnt
- 15.6 Terminal Question
- 15.7 Feedback to In-Text Question

## **Lesson 16**

### **Files**

- 1.1 Introduction
- 1.2 Objectives

- 1.3 File
  - 1.3.1 Opening a file
  - 1.3.2 Open ( ) function
  - 1.3.3 File pointers
  - 1.3.4 The tellg ( ) and tellp ( ) function
  - 1.3.5 Write ( ) and read ( ) functions
  - 1.3.6 Close ( ) function
- 1.4 What you have learnt
- 1.5 Terminal Questions
- 1.6 Feedback to In-Text Question