# COMPUTER SCIENCE AND ENTREPRENEURSHIP

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| **Part-I** | **50 Marks** |
| **Part-II** | **50 Marks** |
| **Practical** | **50 Marks** |
| **Total** | **150 Marks** |

**Part-I (Class-IX) Marks: 50 Time: 2:00 Hours**

**UNIT 1: INTRODUCTION TO SYSTEMS**

Introduction

1.1 Theory of Systems
1.2 Types of Systems
1.3 System and Science
1.4 Computer as a System
1.5 The Architecture of von Neumann Computers
1.6 Computing Systems

**UNIT 2: NUMBER SYSTEMS**

Introduction

2.1 Numbering Systems
2.2 Data representation in Computing Systems
2.3 Storing Real Values in Computer Memory
2.4 Binary Arithmetic Operations
2.5 Common Text Encoding Schemes
2.6 Storing Images, Audio and Video in Computers

**UNIT 3: DIGITAL SYSTEMS AND LOGIC DESIGN**

Introduction

3.1 Basics of Digital Systems
3.2 Boolean Algebra and Logic Gates
3.3 Simplification of Boolean Functions
3.4 Creating Logic Diagrams
3.5 Application of Digital Logic

**UNIT 4: SYSTEM TROUBLESHOOTING**

Introduction

4.1 System Troubleshooting
4.2 Troubleshooting Strategies

**UNIT 5: SOFTWARE SYSTEM**

Introduction

5.1 Software
5.2 Introduction to System Software
5.3 Application Software

**UNIT 6: INTRODUCTION TO COMPUTER NETWORKS**

Introduction

6.1 Network as a System
6.2 Fundamental Concepts in Data Communication
6.3 Networking Devices
6.4 Network Topologies
6.5 Transmission Modes
6.6 The OSI Networking Model
6.7 Ipv4 and Ipv6
6.8 Protocols and Network Services
6.9 Network Security
6.10 Types of Networks
6.11 Real-World Applications of Computer Networks
6.12 Standard Protocols in TCP/IP Communications
6.13 Network Security Methods

**UNIT 7: COMPUTATIONAL THINKING**

Introduction

7.1 Definition of Computational Thinking
7.2 Principles of Computational Thinking
7.3 Algorithm Design Methods
7.4 Algorithmic Activities
7.5 Dry Run
7.6 Introduction to LARP (Logic of Algorithms for Resolution of Problems)

7.7 Error Identification and Debugging

**UNIT 8: WEB DEVELOPMENT WITH HTML, CSS AND JAVASCRIPT**

Introduction

8.1 Web Development

8.2 Basic Components of Web Development

8.3 Getting Started with HTML 8.4 HTML Basic Structure

8.5 Creating Content with HTML 8.6 Styling with CSS

8.7 Introduction to JavaScript 8.8 Developing and Debugging

**UNIT 9: DATA SCIENCE AND DATA GATHERING**

Introduction

9.1 Data 9.2 Data Types

9.3 Organising and Analysing Data 9.4 Data Types

9.5 Data Storage Techniques 9.6 Data Visualization

9.7 Data Pre-Processing and Analysis

9.8 Collaborative Tools and Cloud Storage

9.9 Introduction to Data Science

9.10 Big Data and Its Applications

**UNIT 10: EMERGING TECHNOLOGIES IN COMPUTER SCIENCE**

Introduction

10.1 Introduction to Artificial Intelligence (AI)

10.2 AI Algorithms and Techniques

10.3 Introduction to Internet of Things (IoT)

10.4 Implications and Future of Emerging Technologies

**UNIT 11: ETHICAL, SOCIAL AND LEGAL CONCERNS IN COMPUTER USAGE**

Introduction

11.1 Responsible Computer Usage

11.2 Safe and Secure Operation of Digital Plateforms

11.3 Best Practices in Online Behavior

11.4 Legal and Ethical Frameworks

11.5 Intellectual Property Rights 11.6 Responsible Internet Use

11.7 Impact of Computing on Society

**UNIT 12: ENTREPRENEURSHIP IN DIGITAL AGE**

Introduction

12.1 Entrepreneurship

12.2 Entrepreneurship in the Digital Landscape

12.3 Digital Tools and Platforms 12.3 Business Idea Generation

12.5 Developing Business Plans

12.6 Ethical and Sustainable Entrepreneurship

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**Marks: 50** **Part-II (Class-IIX)** **Time: 2:00 Hours**

**Unit 1: Introduction to Programming**

1.1 Programming Environment
Integrated Development Environment (IDE), Text Editor, Compiler

1.2 Programming Basics
Reserved Words, Structure of a C Program, Purpose and Syntax of comments in C Programme

1.3 Constants and Variables
Constants, Variables, Data type of a Variable, Name of a variable, Variable Declaration, Variable initialization

**Unit 2: User Interaction**

2.1 Input/output (I/O) Functions
printf(), Format Specifiers, scanf(), getch(), Statement Terminator, Escape Sequence

2.2 Operators
Assignment Operators, Arithmetic Operators, Relational Operators, Assignment Operator (=) and equal to Operator (= =), Logical Operators, Unary vs Binary Operators, Operators' Precedence

**Unit 3: Conditional Logic**

Control Statements
Selection Statements
If Statement, If-else Structures, Nested If-else Structures, Solved Example Problems

**Unit 4: Data and Repetition**

Data Structures
Array, Array Declaration, Array Initialization, Accessing array elements, Using variables as array indexes
Loop Structures
General Structure of loops, General syntax of for loop, Nested Loops, Solved Example Poroblems, Loops and Arrays, Solved Examples Prblems

**Unit 5: Functions**

Types of Functions, Advantages of Functions, Structure of a Function, Defining a Function
Glossary Indexes Answers

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