

COMPUTER SCIENCE

(For Class – XI)



ਇਹ ਪੁਸਤਕ ਪੰਜਾਬ ਸਰਕਾਰ ਦੁਆਰਾ ਮੁਫਤ
ਦਿੱਤੀ ਜਾਣੀ ਹੈ ਅਤੇ ਵਿਕਰੀ ਲਈ ਨਹੀਂ ਹੈ।



Punjab School Education Board

Sahibzada Ajit Singh Nagar

© Punjab Government

First Edition 2021-22 56,900 Copies

Revised Edition 2022-23.....42,200 Copies

Revised Edition 2023-24.....25,000 Copies

All rights, including those of translation, reproduction
and annotation etc., are reserved by
the Punjab Government.

WARNING

1. The Agency-holders shall not add any extra binding with a view to charge extra money for the binding. (Ref. Cl. No. 7 of agreement with Agency-holders).
2. Printing, publishing, stocking, holding or selling etc., of spurious text-books qua text-books printed and published by the Punjab School Education Board is a cognizable offence under Indian Penal Code.

(The text-books of the Punjab School Education Board are printed on paper carrying 'water mark' of the Board.)

ਇਹ ਪੁਸਤਕ ਫਿਕਰੀ ਲਈ ਨਹੀਂ ਹੈ।

FOREWORD

The Punjab Curriculum Framework (PCF 2013) which is based on National Curriculum Framework (NCF) 2005 recommends that the child's knowledge must be connected to their life outside the school. It indicates a departure from the legacy of bookish learning and ensures that learning is shifted from rote methods to activity based learning and also provides an opportunity for the holistic development of the students.

Over the years, Computer Science as a discipline has evolved and emerged as a driving force for socio-economic activities. Computer technologies are widely used in diverse areas of modern life such as education, business, health, transport and all other sectors also. With the advent of computer and communication technologies, there has been a paradigm shift in teaching at the school level. The role and relevance of this discipline is in focus because the expectations from the school pass-outs have grown to meet the challenges of the contemporary world. Today, we are living in an interconnected world where computer-based applications influence the way we learn, communicate, commute or even socialise in day to day life.

Keeping in view these requirements, Punjab School Education Board has introduced Computer Science as a compulsory subject from class 6th to 12th as per guidelines of Punjab Government. Every effort has been made to include each requisite information according to level of class 11th in this book. I hope it will be useful for students and teachers.

This book focuses on the fundamental concepts and problem-solving skills while opening a window to the emerging and advanced areas of computer science. The newly developed syllabus has dealt with the dual challenge of reducing curricular load as well as introducing this ever evolving discipline.

Punjab School Education Board welcomes and look forward to feedback and suggestions for the improvement of its subsequent editions.

Chairman

Punjab School Education Board

‘ਸਮਾਜਿਕ ਨਿਆਂ, ਅਧਿਕਾਰਿਤਾ ਅਤੇ ਘੱਟ ਗਿਣਤੀ ਵਿਭਾਗ’ ਪੰਜਾਬ

Text-book Development Committee

Writers :

1. **Mr. Vikas Kansal**, Shaheed Udham Singh Govt. Sen. Sec. School (Girls), Sunam Udham Singh Wala, Sangrur
2. **Mr. Sachin Dhiman**, Govt Senior Secondary School, Ghumandgarh, Shri Fatehgarh Sahib
3. **Mr. Gagandeep Singh**, Govt Model Senior Secondary School, Phase 3B1, Mohali S.A.S.Nagar
4. **Mrs. Pooja Arora**, Govt. Senior Secondary School, Sahauran, S.A.S. Nagar
5. **Mr. Maninder Singh**, Govt. Senior Secondary Smart School (Boys) Amloh, Shri Fatehgarh Sahib
6. **Mr. Avtar Singh**, Govt. Senior Secondary School, Ghunas, Barnala

Vetter :

1. **Mr. Maninder Singh**, Govt. Senior Secondary Smart School (Boys) Amloh, Sri Fatehgarh Sahib
2. **Mrs. Bindu**, Govt. Model Senior Secondary School, Phase 3B1, Mohali S.A.S.Nagar
3. **Mrs. Sukhwinder Kaur**, Govt. Senior Secondary School, Sahauran, S.A.S. Nagar

Co-ordinator :

1. **Mr. Manvinder Singh**, Subject Expert (Computer), Punjab School Education Board, S.A.S. Nagar

Cover Title :

1. **Mr. Manjit Singh Dhillon**, Artist, Punjab School Education Board, S.A.S. Nagar

INDEX

Chapter and its Contents

Page No.

CHAPTER – 1st

Web Designing with HTML & CSS

1-20

- 1.1 What is Good Web Design?
- 1.2 Phases of Website Development
- 1.3 HTML Concept
- 1.4 HTML's Role in the Web
- 1.5 Structure of HTML Documents
- 1.6 HTML Editor
- 1.7 Working with Links and Images
- 1.8 Style Sheets
- 1.9 Types of Style Sheets
- 1.10 CSS Syntax
- 1.11 CSS Selectors
- 1.12 Different Style Sheet Properties
- 1.13 Example Program for CSS Properties

CHAPTER 2nd

Usage of Internet

21-40

- 2.1 Internet
- 2.2 Internet & its Application
- 2.3 Internet Search
- 2.4 Internet and World Wide Web
- 2.5 Internet Security

CHAPTER 3rd

Cyber Threats and Security

41-55

- 3.1 Introduction
- 3.2 What is Cyber?
- 3.3 Cyber Threats/Attacks
- 3.4 Causes of Cyber Threats/Attacks
- 3.5 Malware & Its Variants
- 3.6 Cyber Security & Techniques
- 3.7 Cyber Space & WWW
- 3.8 Introduction to IT Act 2000

CHAPTER 4TH

Computer System and Maintenance

56-81

- 4.1 Introduction
- 4.2 Computer Maintenance and Security
- 4.3 Preventive Maintenance
- 4.4 Booting and Safe mode Problems
- 4.5 Installation of Device Drivers
- 4.6 Plug and Play Hardware Installation
- 4.7 Type of Ports
- 4.8 PC Security Tools
- 4.9 Software Update and Upgrade
- 4.10 MS Office Installation
- 4.11 Introduction to Windows Operating Systems
- 4.12 Introduction to Thin Client Technology
- 4.13 Control Panel
- 4.14 Utility Programs
- 4.15 Shutting Down Options55

CHAPTER 5TH

Database Management System

82-90

- 5.1 Introduction
- 5.2 Database
- 5.3 DBMS
- 5.4 Application Areas of DBMS
- 5.5 Data Base Life Cycle
- 5.6 DBMS Working
- 5.7 Architecture of DBMS
- 5.8 Features/ Characteristics of DBMS
- 5.9 Limitations of DBMS
- 5.10 Cloud Database

CHAPTER 6TH

Concept of Programming and Programming Languages

91-107

- 6.1 Introduction
- 6.2 Concept of Program and Programming
- 6.3 Programming Languages
- 6.4 Language Translator
- 6.5 Programming Process

CHAPTER 7TH

Introduction to C and Basic Structure of C Program

108-128

- 7.1 Introduction and History of C
- 7.2 Why C is called Middle Level Language
- 7.3 Introduction to C Editors & IDEs
- 7.4 Creating and Executing C Programs
- 7.5 Getting Started with C
- 7.6 Character set
- 7.7 Tokens: keywords, Identifiers, Literals, Operators, Special Symbols
- 7.8 Concept of variables & constants and their declarations
- 7.9 Data types – Primitive Data types only
- 7.10 Header files in C
- 7.11 Input and Output Statements in C
- 7.12 Structure of a C program

CHAPTER 8TH

Operators and Expressions in C

129-143

- 8.1 Introduction
- 8.2 Concept of Operator and Operand
- 8.3 Expressions
- 8.4 Types of Operators according to number of Operands
- 8.5 General Classification of Operators
- 8.6 Type Conversion
- 8.7 Precedence of Operators

Appendix - I

Lab Activity for Typing Practice in English

144 -146

Appendix - II

Lab Activity for Typing Practice in Punjabi (Using Anmol Lipi)

147-149

Appendix - III

Lab Activity for Typing practice in Punjabi (using Raavi Unicode Font)

150-155

Appendix - IV

Commonly used Full Forms

156-157

Appendix - V

Commonly Used Shortcut Keys (MS Word)

158-159

Commonly Used Shortcut Keys (MS Excel)

160