Bal Bharati PUBLIC SCHOOL

SYLLABUS (2025-2026)

CLASS: XI
SUBJECT: Computer Science

TEXTBOOKS:
1. Computer Science: Preeti Arora (XI)/ Sumita Arora
2. NCERT

Schools may consider the following suggestions:

- Make sure you are thorough with the entire syllabus before allocating weightage.
- Please rationalize the syllabus based on the Annual Examination Schedule.
- The specific syllabus for each exam should be clearly mentioned.
- Please mention the chapters which are not meant for evaluation/assessment purpose and should be done for learning enrichment.
- Blueprint along with the weightage assigned to each chapter is to be mentioned. Also, certain topics that have been thoroughly covered in previous examinations can be assessed through revision assignments or projects. This would allow students to focus on more important chapters.
- Classes (XI-XII) subject teachers to adhere to the instructions as per the CBSE Curriculum.

EXAMINATION	UNIT/ CHAPTER / TOPIC	SUBTOPICS	WEIGHTAGE (MARKS)
HALF YEARLY	Unit 1: Computer Systems and Organisation	Basic computer organisation: Introduction to Computer System, hardware, software, input device, output device, CPU, memory (primary, cache and secondary), units of memory (bit, byte, KB, MB, GB, TB, PB) Types of software: System software (Operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler, and interpreter), application software	15 marks

		Operating System(OS): functions of the operating system, OS user interface Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth tables and De Morgan's laws, Logic circuits Number System: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems Encoding Schemes: ASCII, ISCII, and Unicode (UTF8, UTF32	
	Unit 2: Computational Thinking and Programming - I	Introduction to Problem-solving: Steps for Problem-solving (Analyzing the problem, developing an algorithm, coding, testing, and debugging), representation of algorithms using flowchart and pseudocode, decomposition. Familiarization with the basics of Python programming: Introduction to Python, Features of Python, executing a simple "hello world" program, execution modes: interactive mode and script mode, Python character set, Python tokens(keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments Knowledge of data types: Number(integer, floating point, complex), boolean, sequence(string, list, tuple), None, Mapping(dictionary), mutable and immutable data types. Operators: arithmetic operators, relational operators, logical operators, assignment operators, augmented assignment operators, identity operators (is, is not), membership operators (in not in) Expressions, statement, type conversion, and input/output: precedence of operators, expression, evaluation of an expression, type-conversion (explicit and implicit conversion), accepting data as input from the console and displaying output. Errors- syntax errors, logical errors, and run-time errors Flow of Control: introduction, use of indentation, sequential flow, conditional and iterative flow Conditional statements: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: sort 3 numbers and divisibility of a number.	10 marks 15 marks 15 marks

		Iterative Statement: for loop, range(), while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number, etc.	15 marks
TOTAL MARKS			**70 marks**

EXAMINATION	UNIT/ CHAPTER / TOPIC	SUBTOPICS	WEIGHTAGE (MARKS)
Annual	Computer System Organization	Introduction to Computer System, Evolution of Computer, Computer Memory, Data Transfer between Memory and CPU, Data and Information, Software, Operating System	5 Marks
	Encoding Schemes and Number System	Number System, Conversion between Number Systems	5 Marks
	Getting Started with Python	Familiarization with the basics of Python programming: Introduction to Python, Features of Python, executing program, execution modes: interactive mode and script mode, Python character set, Python tokens(keyword, identifier, literal, operator, punctuator), variables, concept of l-value and r-value, use of comments Knowledge of data types: Number(integer, floating point,complex), boolean, sequence(string, list, tuple), None, Mapping(dictionary), mutable and immutable data types. Operators: arithmetic operators, relational operators, logical operators, assignment operators, augmented assignment operators, identity operators (is, is not), membership operators (in not in) Expressions, statement, type conversion, and input/output: precedence of operators, expression, evaluation of an expression, type-conversion (explicit and implicit conversion), accepting data as input from the console and displaying output. Errors- syntax errors, logical errors, and run-time errors	6 Marks

	Flow of control	Introduction, use of indentation, sequential flow, conditional and iterative flow Conditional statements: if, if-else, if-elif-else Iterative Statement: for loop, range(), while loop, flowcharts, break and continue statements, nested loops	8 marks
	Strings	String operations (concatenation, repetition, membership and slicing), traversing a string using loops, built-in functions/methods–len(), capitalize(), title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(),lstrip(), rstrip(), strip(), replace(), join(), partition(), split()	8 marks
	Lists	Lists: introduction, indexing, list operations (concatenation, repetition, membership and slicing), traversing a list using loops, built-in functions/methods–len(), list(), append(), extend(), insert(), count(), index(), remove(), pop(), reverse(), sort(), sorted(), min(), max(), sum(); nested lists	8 marks
	Tuples & Dictionaries	Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership and slicing); built-in functions/methods – len(), tuple(), count(), index(), sorted(), min(), max(), sum(); tuple assignment, nested tuple; suggested programs: finding the minimum, maximum, mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple. Dictionary: introduction, accessing items in a dictionary using keys, mutability of a dictionary (adding a new term, modifying an existing item), traversing a dictionary, built-in functions/methods – len(), dict(), keys(), values(), items(), get(), update(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), sorted();	10 marks
	Introduction to Python modules	Importing module using 'import ' and using from statement, importing math module (pi, e, sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan()); random module (random(), randint(), randrange()), statistics module (mean(), median(), mode()).	5 marks
	Society, Law and Ethics	Digital Footprints, Digital Society and Netizen: net etiquettes, communication etiquettes, social media etiquettes, Data Protection: Intellectual property rights (copyright, patent,	15 marks

		trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source software and licensing (Creative Commons, GPL and Apache), Cyber Crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, cyber trolls, cyber bullying, Cyber safety: safely browsing the web, identity protection, confidentiality, Malware: viruses, trojans, adware, E-waste management: proper disposal of used electronic gadgets., Information Technology Act (IT Act), Technology and society: Gender and disability issues while teaching and using computers	
Total marks			**70 marks**

INTERNAL ASSESSMENT (PRACTICAL/PROJECT /VIVA) : 30 MARKS