CLASS: XI			SUBJECT- COMPUTER SCIENCE
SN	**Month**	**No. of working days**	**Name of the chapter/topic to be covered**
1	June & July	33	**Unit I: 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 ● Operating System(OS): functions of the operating system, OS user interface ● Boolean logic: NOT, AND, OR, NAND, NOR, XOR, NOT, 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)
2	August	23	**Unit II: 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 pseudo code, 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
3	September	24	● 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.: absolute value, sort 3 numbers and divisibility of a number. ● 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. ● Strings: introduction, 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()
4	October	20	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, suggested programs: finding the maximum, minimum, mean of numeric values stored in a list; linear search on list of numbers and counting the frequency of elements in a list.
5	November	23	● 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.

6	December	18	● 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(), del, clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), sorted(); Suggested programs: count the number of times a character appears in a given string using a dictionary, create a dictionary with names of employees, their salary and access them Introduction to Python modules: Importing module using 'import <module>' and using from statement, importing math module (pi, e, sqrt(), ceil(), floor(), pow(), fabs(), sin(), cos(), tan()); random module (random(), randint(), randrange()),
7	January	24	**Unit III: Society, Law and Ethics** ● Digital Footprints ● Digital Society and Netizen: net etiquettes, communication etiquettes, social media etiquette ● Data Protection: Intellectual property rights (copyright, patent , 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
8	February	23	Comprehensive Revision, Practical EXAMINATION and Project Submission
9	March		Session Ending EXAMINATION