

# ACADEMIC SESSION 2023-24

Grade: XI

Subject- COMPUTER SCIENCE

Name of the Prescribed Textbook – NCERT

1. NCERT for Statistics
2. Microeconomics- Sandeep Garg

Exam Name	Chapter Name
Periodic Test 1	<p>Unit I: Computer Systems and Organisation</p> <ul style="list-style-type: none"><li>• 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)</li><li>• Types of software: system software (operating systems, system utilities, device drivers), programming tools and language translators (assembler, compiler &amp; interpreter), application software.</li><li>• Operating system (OS): functions of operating system, OS user interface</li><li>• Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's laws and logic circuits</li><li>• Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.</li><li>• Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32)</li></ul>
Periodic Test 2	<ul style="list-style-type: none"><li>• Revision of PT-1 Portion</li></ul> <p>Unit II: Computational Thinking and Programming – 1</p> <ul style="list-style-type: none"><li>• Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging). Representation of algorithms using flow chart and pseudo code, decomposition.</li><li>• 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</li><li>• Knowledge of data types: number (integer, floating point, complex), boolean, sequence (string, list, tuple), none, mapping (dictionary), mutable and immutable data types</li><li>• Operators: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators(is, is not), membership operators(in, not in)</li><li>• Expressions, statement, type conversion &amp; input/output: precedence of operators, expression, evaluation of expression, python statement, type conversion (explicit &amp; implicit conversion), accepting data as input from the console and displaying output.</li><li>• Errors: syntax errors, logical errors, runtime errors.</li></ul>

	<ul style="list-style-type: none"> <li>• Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control.</li> <li>• Conditional statements: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number.</li> <li>• Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern, summation of series, finding the factorial of a positive number etc</li> <li>• Strings: introduction, indexing, string operations (concatenation, repetition, membership &amp; slicing), traversing a string using loops, built-in functions: len(), capitalize(),title(), lower(), upper(), count(), find(), index(), endswith(), startswith(), isalnum(), isalpha(), isdigit(), islower(), isupper(), isspace(), lstrip(), rstrip(), strip(), replace(), join(), partition(), split().</li> <li>• Lists: introduction, indexing, list operations (concatenation, repetition, membership &amp; slicing), traversing a list using loops, built-in functions: 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</li> <li>• Tuples: introduction, indexing, tuple operations (concatenation, repetition, membership &amp; slicing), built-in functions: 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.</li> </ul>
Periodic Test 3	<ul style="list-style-type: none"> <li>• Revision of PT-1 &amp; PT-2 Portion</li> </ul> <p>Unit II: Computational Thinking and Programming – 1</p> <ul style="list-style-type: none"> <li>• 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(), from keys(), copy(), pop(), popitem(), setdefault(), max(), min(), sorted(); Suggested       <ul style="list-style-type: none"> <li>○ 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.</li> </ul> </li> <li>• Introduction to Python modules: Importing module using ‘import &lt;module&gt;’ 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()).</li> </ul> <p>Unit III: Society, Law and Ethics</p> <ul style="list-style-type: none"> <li>• Digital Footprints</li> <li>• Digital Society and Netizen: net etiquettes, communication etiquettes, social media etiquettes</li> </ul>

	<ul style="list-style-type: none"> <li>• 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)</li> <li>• Cyber Crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, cyber trolls, cyber bullying.</li> <li>• Cyber safety: safely browsing the web, identity protection, confidentiality</li> <li>• Malware: viruses, trojans, adware</li> <li>• E-waste management: proper disposal of used electronic gadgets.</li> <li>• Information Technology Act (IT Act)</li> <li>• Technology and society: Gender and disability issues while teaching and using computers</li> </ul>
Final Exam	Revision of Complete Syllabus ( PT1, PT2 & PT 3)