AIR FORCE SCHOOL, BAMRAULI
SPLIT-UP SYLLABUS
ACADEMIC SESSION 2025-26

CLASS - XI SUB: COMPUTER SCIENCE (083)

BOOK NAME : Python

DISTRIBUTION OF MARKS

UnitNo.	Unit Name	TheoryMarks
I	**Computer Systems and Organisation**	**10**
II	**Computational Thinking and Programming**	**45**
III	**Society, Law and Ethics**	**15**
	Total	**70**

MONTH- WISE DISTRIBUTION

Month	Chapter No & Name	No of Periods	Activity
June-July	**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 &interpreter), application software • **Operating system** (OS): functions of operating system, OS user interface • Boolean logic: NOT, AND, OR, NAND, NOR, XOR, truth table, De Morgan's lawsand logic circuits • **Number system**: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems. • Encoding schemes: ASCII, ISCII and UNICODE (UTF8, UTF32) • Emerging trends: Cloud computing, cloud services (SaaS, IaaS, PaaS), blockchains, Artificial Intelligence (AI), Machine Learning (ML), Internet of Things (IoT) **Indian Script Codes…**	36	1- Developing Logic Circuit 2- PC virtual assembling 3- Developing Ascii Table for class student's name
A u g	**Unit 2: Computational Thinking and Programming** • **Python Basics** • Introduction to problem solving: Steps for problem solving (analysing the problem, developing an algorithm, coding, testing and debugging). representationof algorithms using flow chart and	24	1- Flow Charts for Various day to day jobs

	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 immutabledata types • **Operators**: arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators (is, is not), membership operators (in, not in) • **Expressions**, statement, type conversion & input/output: precedence of operators, expression, evaluation of expression, python statement, type ● conversion (explicit & implicit conversion), accepting data as input from theconsole and displaying output **Flow of control**: introduction, use of indentation, sequential flow, conditional anditerative flow control ● Conditional statements: if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number ● 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 Strings: introduction, indexing, string operations (concatenation, repetition, membership & 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()		2- Seat allotment system in the hall

September	• **<u>Lists</u>**: introduction, indexing, list operations (concatenation, repetition, membership & 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 • **<u>Tuples</u>**: introduction, indexing, tuple operations (concatenation, repetition, membership & 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	21	1- Listing The details of students 2- Tabulating data for school
October	• **<u>Dictionary</u>**: introduction, accessing items in a dictionary using keys, mutability of dictionary (adding a new item, modifying an existing item), traversing a dictionary, built-in functions: len(), dict(), keys(), values(), items(), get(), update(), del(), clear(), fromkeys(), copy(), pop(), popitem(), setdefault(), max(), min(), count(), sorted(), copy(); 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	20	1- Developing simulated virtual Dictionary

November	**Sorting** • Sorting techniques: Bubble and Insertion sort • Introduction to Python modules: Importing module using 'import <module>' andusing 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)	23	1- Dry run techniques of arranging values 2- Lottery system development
Dec-	**Unit III: Society, Law and Ethics** • ● Digital Footprints • Digital society and Netizen: net etiquettes, communication etiquettes, social media etiquettes • Data protection: Intellectual Property Right (copyright, patent, trademark), violation of IPR (plagiarism, copyright infringement, trademark infringement), open source softwares and licensing (Creative Commons, GPL and Apache) • Cyber-crime: definition, hacking, eavesdropping, phishing and fraud emails, ransomware, preventing cyber crime • Cyber safety: safely browsing the web, identity protection, confidentiality, cyber trolls and bullying. •	18	1- One Act for Cyber crime and Cyber cell working
Jan	• Safely accessing web sites: malware, viruses, trojans, adware • E-waste management: proper disposal of used electronic gadgets • Indian Information Technology Act (IT Act) • Technology & Society: Gender and disability issues while teaching and using • computers	17	1- Simulated Threat management system
Feb	Revision, Project Work , Session Ending Practical Examination	23	1- Project work
March	• **Session End Exam**		

4. Practical

S.No.	Unit Name	Marks (Total=30)
1.	**Lab Test (12 marks)**	
	Python program (60% logic + 20% documentation + 20% code quality)	**12**
2.	**Report File + Viva (10 marks)**	
	Report file: Minimum 20 Python programs	**7**
	Viva voce	**3**
3.	Project (that uses most of the concepts that have been learnt)	**8**

*Refer CBSE Curriculum for detailed guidelines for Project work.