

## LOVE DALE RESIDENTIAL SCHOOL

**Split-up syllabus (Theory & Practical)2024-25**

**Class:XI**

**Subject: Computer Science(083)**

**Max Marks: 70**

Unit	Unit Name	Marks (Theory)
I	Computer Systems and Organisation	10
II	Computational Thinking and Programming-1	45
III	Society, Law and Ethics	15
	<b>Total</b>	<b>70</b>
S No	Area	Marks (Practical)
1	Lab Test: Python program(60%logic+20%documentation+20%code quality)	<b>12</b>
2	Report file:Minimum 20 Python programs Viva voce	<b>7</b> <b>3</b>
3	Project (that uses the concepts that have been learnt in Class 11)	<b>8</b>
	<b>Total</b>	<b>30</b>

Month	Portion to be covered	THEORY	PRACTICAL	Expected No. of working Days in KVS	TEST/EXAM
July 2024	<p><b>Unit-1(Computer Systems and Organisation)</b>                      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 &amp; interpreter), application software                      Operating system(OS): functions of operating system, OS user interface                      Boolean Logic: NOT, AND, OR                      Number system: Binary, Octal, Decimal and Hexadecimal number system; conversion between number systems.                      Encodingschemes: ASCII,ISCIIand UNICODE(UTF8,UTF32)</p> <p><b>Unit-2 (Computational Thinking and Programming -1)</b>                      Introduction to Problem solving: Introduction to problem solving: Steps for problem solving (analyzing the problem, developing an algorithm, coding, testing and debugging).representation of algorithms using flow chart and pseudo code, decomposition.</p>	15	15	24	

August 2024	<p><b>Familiarization with the basics of Python programming:</b> Introduction to Python, features of Python, executing a simple "helloworld" program, execution modes: interactive mode and script mode</p> <p>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</p> <p><b>Operators:</b> arithmetic operators, relational operators, logical operators, assignment operator, augmented assignment operators, identity operators (is, isnot),membership operators(in, notin)</p> <p>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</p> <p><b>Errors:</b> syntax errors, logical errors, runtime errors</p> <p>Flow of control: introduction, use of indentation, sequential flow, conditional and iterative flow control</p>	20	10	24	<p>Last week of September</p> <p>Periodic Test 1</p> <p>Syllabus: Unit 1,unit 2 upto Python Tokens</p>
September 2024	<p><b>Conditional statements:</b> if, if-else, if-elif-else, flowcharts, simple programs: e.g.: absolute value, sort 3 numbers and divisibility of a number</p> <p>Iterative statements: for loop, range function, while loop, flowcharts, break and continue statements, nested loops, suggested programs: generating pattern,</p> <p>Summation of series, finding the factorial of a positive number etc</p>	15	10	22	
October 2024	<p><b>Strings:</b> 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()</p>	10	10	16	
November 2024	<p><b>Lists:</b> 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</p> <p><b>Tuples:</b> introduction, indexing, tuple operations(concatenation,repetition,membership&amp;slicing), built-infunctions:len(),tuple(),count(), index(), sorted(), min(), max(), sum(); tuple assignment, nestedtuple, suggested programs: finding the minimum, maximum,</p>	20	15	22	<p>1st Week of December</p> <p>PT-2/Half Yearly Examination</p> <p>Syllabus: Unit1, Unit 2 Strings</p>

	mean of values stored in a tuple; linear search on a tuple of numbers, counting the frequency of elements in a tuple				
December 2024	<b>Dictionary:</b> 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.	15	10	19	
January- Feb 2025	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()).  <b>Unit III: Society, Law and Ethics</b> Digital Footprints Digital Society and Netizen: net etiquettes, communication etiquettes, social media etiquettes 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 <b>Revision Work</b>	20	5	38	3 <sup>rd</sup> week of January Periodic Test 3 Syllabus: List, Tuples and Dictionary
MARCH 2025	<b>SESSION END EXAM</b>				

**PRACTICAL : 30 MARKS**

**FEBRUARY/ MARCH - REVISION**

**SESSION ENDING EXAM:2024-25 (Full syllabus)**