

**D.A.V. Public School**  
**Affiliated to CBSE(10+2)**  
**Sector – 3 Dhurwa Ranchi-4**

**Class VIII IT Syllabus(2019-2020)**

**Prescribed Books:**

- Active Computer 8 Sharda Press Pvt Ltd

| Months | No. of Working Days | Unit / Chapters         | Sub Topics   | Exam / Tests Portion   |
|--------|---------------------|-------------------------|--|--|
| April  | 24                  | Basic Processing        | <ul style="list-style-type: none"> <li>❖ Input</li> <li>❖ Processing</li> <li>❖ Output</li> <li>❖ Storage</li> <li>❖ Execution of a computer instruction</li> <li>❖ Micro instruction</li> </ul>   |  |
|        |                     | More on Number Systems  | <ul style="list-style-type: none"> <li>❖ Conversion between number systems</li> </ul>  |  |
| May    | 15                  | More on Number Systems  | <ul style="list-style-type: none"> <li>❖ Conversion between number systems</li> <li>❖ Binary coded decimal</li> <li>❖ ASCII Alphanumeric code</li> <li>❖ Multiplication</li> <li>❖ Integer Division</li> </ul>   |  |
| June   | 12                  | More on MS Word 2010    | <ul style="list-style-type: none"> <li>❖ Adding text in a word documents</li> <li>❖ Saving new documents</li> <li>❖ Saving new changes</li> <li>❖ Opening new document</li> <li>❖ Inserting and adding text</li> <li>❖ Insert and replace text</li> </ul>  | <p><b><u>PT I Portion</u></b></p> <p>Basic Processing +<br/>More on Number Systems</p>   |
| July   | 25                  | More on QBasic          | <ul style="list-style-type: none"> <li>❖ QBasic interface</li> <li>❖ Naming a current program</li> <li>❖ Adding documentation to your programs</li> <li>❖ Reading and writing to files</li> <li>❖ Creating graphics in QBasic</li> <li>❖ Types of commands</li> <li>❖ Sound effects in QBasic</li> <li>❖ Using Mathematical Functions</li> </ul> <p><b>Revision for PT I</b></p> | <p><b><u>Half Yearly Exam Portion</u></b></p> <p><b>PT I Portion</b> + More on MS Word 2010 + More on QBasic + An Introduction to HTML</p> |
| August | 24                  | An Introduction to HTML | <ul style="list-style-type: none"> <li>❖ Basic concepts</li> </ul>   |  |

|           |    |  |   |  |
|-----------|----|--|---|--|
|           |    |  | <ul style="list-style-type: none"> <li>❖ Primary tags</li> <li>❖ Creating your web page</li> <li>❖ Basic text formatting</li> <li>❖ Lists</li> <li>❖ Attributes of body element</li> </ul> <p><b>Revision for Half Yearly Exam</b></p>  |  |
| September | 13 | Spreadsheets   | <ul style="list-style-type: none"> <li>❖ Features of a spreadsheets</li> <li>❖ Creating of a spreadsheet</li> <li>❖ Inserting page numbers on a single worksheet</li> <li>❖ Highlighting cells</li> <li>❖ Sorting cells</li> <li>❖ Creating a chart</li> <li>❖ Printing a chart</li> <li>❖ Renaming sheets/Adding sheets</li> </ul> |  |
| October   | 18 | An Introduction to Java Syntax                       | <ul style="list-style-type: none"> <li>❖ Introduction</li> <li>❖ Writing the code for our Java program\compiling the program</li> <li>❖ Identifiers</li> <li>❖ Java Keywords\data Types in Java</li> <li>❖ Literals</li> <li>❖ Variables</li> </ul> <p><b>Revision for PT II</b></p>  | <p><b><u>PT II Portion</u></b></p> <p>Spreadsheets + An Introduction to Java Syntax</p>  |
| November  | 22 | Drawing and Animation with Flash CS6                 | <ul style="list-style-type: none"> <li>❖ Drawing a circle on the stage</li> <li>❖ Creating a symbol and adding animation</li> </ul>   |  |
| December  | 18 | IT Security  | <ul style="list-style-type: none"> <li>❖ Introduction</li> <li>❖ Threats and Risks</li> <li>❖ Types of computer crimes</li> <li>❖ IT Security</li> <li>❖ Perverse Software</li> <li>❖ Anti Virus software</li> <li>❖ Virus Infection Media</li> <li>❖ Protection and Treatment</li> <li>❖ Hackers and Crackers</li> </ul>           | <p><b><u>PT III Portion</u></b></p> <p>Drawing and Animation with Flash CS6 + More on MS Word 2010 + Anti Virus software + Java Program</p>  |
| January   | 26 | <b>Revision for PT III &amp; Final / Annual Term</b> |   | <p><b><u>Final / Annual Term Portion</u></b></p> <p>Drawing and Animation with Flash CS6 + IT Security + More on Number Systems + An Introduction to HTML + More on QBasic + Spreadsheets + Whole Syllabus</p> |

**D.A.V. Public School**  
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**Class IX Computer Applications Syllabus(2019-2020)**

**Prescribed Books:**

- **Excel In Computer Application 9 Cordo A**

| <b>Months</b> | <b>No. of Working Days</b> | <b>Unit / Chapters</b>               | <b>Sub Topics</b>  | <b>Exam / Tests Portion</b>  |
|---------------|----------------------------|--------------------------------------|--|--|
| April         | 24                         | Basics of Information Technology I   | <ul style="list-style-type: none"> <li>❖ <b>Computer Systems</b> <ul style="list-style-type: none"> <li>○ Characteristics of a computer</li> <li>○ Components of a computer system – CPU. Memory, Storage devices and I/O devices</li> </ul> </li> <li>❖ <b>Memory:</b> Primary (RAM and ROM) and Secondary memory</li> <li>❖ <b>Storage Devices:</b> Hard Disk, CD ROM, DVD, Pen/Flash Drive, memory stick</li> </ul> |  |
| May           | 15                         | Basics of Information Technology II  | <ul style="list-style-type: none"> <li>❖ <b>I/O Devices:</b> keyboard, mouse, monitor, printer, scanner, web camera</li> <li>❖ Types of software: System software(Operating system, device driver), application software including mobile applications</li> </ul>  |  |
| June          | 12                         | Basics of Information Technology III | <ul style="list-style-type: none"> <li>❖ <b>Computer Networking</b> <ul style="list-style-type: none"> <li>○ Types of networks: PAN, LAN, MAN, WAN</li> <li>○ Wired/ Wireless communication, Wi-Fi, Bluetooth, Cloud computers(Private/ Public)</li> </ul> </li> <li>❖ <b>Multimedia:</b> Images, audio, video, animation</li> </ul>   | <b><u>PT I Portion</u></b><br>Basics of Information Technology(April + May + June Sub Topics ) |
| July          | 25                         | Cyber Safety                         | <ul style="list-style-type: none"> <li>❖ Safely browsing the web and using social networks: identity protection proper usage of passwords privacy, confidentiality of information, cyber staking, reporting cybercrimes</li> <li>❖ Safely accessing websites: viruses and malware</li> </ul> <p><b>Revision for PT I</b></p>   | <b><u>Half Yearly Exam Portion</u></b><br><b>PT I Portion + Cyber Safety (July Sub Topics)</b> |

|           |    |                  |  |   |
|-----------|----|------------------|--|---|
| August    | 24 | Office Tools I   | <ul style="list-style-type: none"> <li>❖ <b>Word Processor</b> <ul style="list-style-type: none"> <li>○ Introduction to a word processor: Create and save a document</li> <li>○ Edit and format text: text style(B,I, U), font type, font size, text colour, alignment of text. Format paragraphs with line and / or paragraph spacing. Add headers and footers, numbering pages, grammar and spell check utilities, subscript and superscript, insert symbols, use print preview and print a document</li> </ul> </li> </ul> <p><b>Revision for Half Yearly Exam</b></p>  |   |
| September | 13 | Office Tools II  | <ul style="list-style-type: none"> <li>❖ <b>Word Processor</b> <ul style="list-style-type: none"> <li>○ Insert pictures, changes the page setting, add bullets and numbering borders and shading and insert tables – insert/delete rows and columns merge and split cells</li> <li>○ Use auto format, track changes, review comments, use of drawing tools, shapes and mathematical symbols</li> </ul> </li> </ul>   |   |
| October   | 18 | Office Tools III | <ul style="list-style-type: none"> <li>❖ <b>Presentation Tool</b> <ul style="list-style-type: none"> <li>○ Understanding the concept of slide shows</li> <li>○ Basic elements of a slide</li> <li>○ Different types of slide layout</li> <li>○ Create and save a presentation</li> <li>○ Different slide view – Normal view, slide sorter view and handouts view</li> <li>○ Edit and format a slide: add title, subtitles, text background and watermark, header and footers and slide numbers</li> <li>○ Insert pictures from files, create animation, add sound effects and rehearse timings</li> </ul> </li> </ul> <p><b>Revision for PT II</b></p> | <p><b><u>PT II Portion</u></b></p> <p>Office Tools I + Office Tools II<br/>Word Processor</p> |
| November  | 22 | Office Tools IV  | <ul style="list-style-type: none"> <li>❖ <b>Spreadsheets</b> <ul style="list-style-type: none"> <li>○ Concepts of a worksheet and a workbook, create and save a worksheet</li> <li>○ Working with a spreadsheet: enter numbers, text, date/time, series using auto fill, edit and format a worksheet including changing the colour, size, font, alignment of text, insert and delete cells, rows and columns, enter a formula using the operators(+,-,*,/) refer to cells and print a worksheet</li> <li>○ Use simple statistical function: SUM(),</li> </ul> </li> </ul>  |   |

|          |    |   |   |  |
|----------|----|---|---|--|
|          |    |   | AVERAGE(), MAX(), MIN(),IF() (Without compound statements), embed charts of various types, line, pie, scatter, bar and area in a worksheet.   |  |
| December | 18 | Python  | <ul style="list-style-type: none"> <li>❖ Introduction to Python</li> <li>❖ A simple Hello World program</li> <li>❖ Running a Python program</li> <li>❖ The notion of data types and variables: integer, float, string</li> <li>❖ Arithmetic operation: +, -,*,/</li> <li>❖ Computer Applications Projects Work</li> </ul> | <p><b><u>PT III Portion</u></b></p> <p>Office Tools III Presentation Tools</p>   |
| January  | 26 | <b>Revision for PT3 &amp; Final / Annual Term</b> |   | <p><b><u>Final / Annual Term Portion</u></b></p> <p>Office Tools IV Spreadsheets + Python + subscript and superscript + slide layout + Operating system + Whole Syllabus</p> |

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**Class X Computer Applications Syllabus(2019-2020)**

**Prescribed Books:**

- **Excel In Computer Application 10 Cordo A**

| Months | No. of Working Days | Unit / Chapters | Sub Topics   | Exam / Tests Portion  |
|--------|---------------------|-----------------|--|---|
| April  | 24                  | Networking I    | <ul style="list-style-type: none"> <li>❖ Internet               <ul style="list-style-type: none"> <li>○ World Wide Web, Web Servers, Web Clients, Web Sites, Web Pages, Web Browsers, Blogs News Groups, HTML, Web Address, E mail Address</li> </ul> </li> <li>❖ Downloading and Uploading files from a Remote Site</li> <li>❖ Internet Protocols               <ul style="list-style-type: none"> <li>○ TCP/IP, SMTP, POP3, HTTP, HTTPS</li> </ul> </li> <li>❖ Remote Login and File Transfer Protocols               <ul style="list-style-type: none"> <li>○ SSH, SFTP, FTP, SCP, TELNET, SMTP, TCP/IP</li> </ul> </li> </ul> |   |
| May    | 15                  | Networking II   | <ul style="list-style-type: none"> <li>❖ Services Available on the Internet               <ul style="list-style-type: none"> <li>○ Information Retrieval</li> <li>○ Locating Sites using Search Engines</li> <li>○ Finding People on the Net</li> </ul> </li> <li>❖ Web Services               <ul style="list-style-type: none"> <li>○ Chat , E-mail, Video Conferencing, E-Learning</li> <li>○ E-Banking, E-Shopping, E-Reservation, E-Governance, E-Groups, Social Networking</li> </ul> </li> <li>❖ Mobile technologies               <ul style="list-style-type: none"> <li>○ SMS, MMS, 3G, 4G</li> </ul> </li> </ul>         |   |
| June   | 12                  | HTML I          | <ul style="list-style-type: none"> <li>❖ Introduction to web page designing using HTML</li> <li>❖ Create and save an HTML document</li> <li>❖ Access a web page using a web browser</li> </ul>   | <b><u>PT I Portion</u></b><br><br>Networking I +<br>Networking II |
| July   | 25                  | HTML II         | Unit 2 HTML<br><ul style="list-style-type: none"> <li>❖ HTML Tags</li> </ul>   | <b><u>Half Yearly Exam Portion</u></b>                            |

|           |    |                                |   |   |
|-----------|----|--------------------------------|---|---|
|           |    |                                | <ul style="list-style-type: none"> <li>○ HTML, HEAD, TITLE</li> <li>○ BODY(Attribute text, background, bgcolor, link, vlink, alink)</li> <li>○ BR(Break), HR(Horizontal Rule)</li> <li>○ Inserting Comments</li> <li>○ H1...H6(Heading)</li> <li>○ P(Paragraph)</li> <li>○ B(Bold),I(Italics),U(Underline)</li> <li>○ UL(Unordered List), OL(Ordered List)</li> <li>○ LI(List Item), Description Lists : DL DT and DD</li> <li>○ Attributes of OL (start, type), UL (type)</li> </ul> | <b>PT I Portion + HTML I + HTML II</b>  |
| August    | 24 | HTML III                       | <ul style="list-style-type: none"> <li>❖ Font tags (attributes: face, size, color)</li> <li>❖ Insert images: img (attributes: src, width, height, alt), sup(super script), sub(subscript)</li> </ul>  |   |
| September | 13 | HTML IV                        | <ul style="list-style-type: none"> <li>❖ HTML Forms: Textbox, Radio buttons, Checkbox, Password, List, Combo box</li> <li>❖ Embed audio and video in a HTML page</li> <li>❖ Create a table using the tags: table, tr, th, td, rowspan, colspan</li> <li>❖ Links; Significance of linking; anchor element(attribute: href, mailto), targets</li> </ul>   |   |
| October   | 18 | HTML V                         | <ul style="list-style-type: none"> <li>❖ Cascading style sheets: color, background-color, border-style, margin height, width, outline, font(family, style, size), align, float</li> </ul>   | <b><u>PT II Portion</u></b><br>HTML I + HTML II + HTML III + HTML IV + HTML V |
|           |    | Cyber Ethics                   | <ul style="list-style-type: none"> <li>❖ Netiquettes</li> <li>❖ Software licenses and the open source software movement</li> <li>❖ Intellectual property rights, plagiarism and digital property rights</li> <li>❖ Freedom of information and the digital divide</li> <li>❖ E-commerce: Privacy, fraud, secure data transmission</li> </ul>   |   |
| November  | 22 | Python                         | <ul style="list-style-type: none"> <li>❖ Revision of Python Basics</li> <li>❖ Conditionals: if, If-else statements</li> <li>❖ Loops: for, while(e.g. sum of first 10 natural numbers)</li> <li>❖ Practice simple programs</li> <li>❖ Computer Applications Projects Works</li> </ul>  |   |
| December  | 18 | <b>Revision for Board Exam</b> |   | <b><u>Pre Board / Mock I / II Portion</u></b><br><br>Whole Syllabus           |

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**Class XI Computer Science Syllabus(2019-2020)**

| Months | No. of Working Days | Unit / Chapters                                  | Sub Topics  | Exam / Tests Portion |
|--------|---------------------|--|---|----------------------|
| July   | 25                  | Computer Systems and Organisation (CSO)          | <ul style="list-style-type: none"> <li>❖ Basic computer organisation: description of a computer system and mobile system, CPU, memory, hard disk, I/O, battery, power.</li> <li>❖ Types of software: application, OS, utility, libraries.</li> <li>❖ Language of Bits: bit, byte, MB, GB, TB, and PB.</li> <li>❖ Boolean logic: OR, AND, NAND, NOR, XOR, NOT, truth tables, De Morgan's laws</li> <li>❖ Information representation: numbers in base 2, 8, 16, unsigned integers, binary addition</li> <li>❖ Strings: ASCII, UTF8, UTF32, ISCII (Indian script code)</li> <li>❖ Execution of a program: basic flow of compilation – program &gt; binary &gt; execution</li> <li>❖ Interpreters (process one line at a time), difference between a compiler and an interpreter</li> <li>❖ Running a program: Notion of an operating system, how an operating system runs a program, idea of loading, operating system as a resource manager.</li> <li>❖ Concept of cloud computers, cloud storage (public/private), and brief introduction to parallel computing</li> </ul> |                      |
| August | 24                  | Programming and Computational Thinking (PCT-1) I | <ul style="list-style-type: none"> <li>❖ Familiarization with the basics of Python programming: a simple "hello world" program, process of writing a program, running it, and print statements; simple data-types: integer, float, string</li> <li>❖ Introduce the notion of a variable, and methods to manipulate it (concept of L-value and R-value even if not taught explicitly)</li> <li>❖ Knowledge of data types and operators: accepting input from the console, assignment statement, expressions, operators and their precedence.</li> <li>❖ Conditional statements: if, if-else, if-elif-else; simple programs: e.g.: absolute value, sort 3 numbers, and divisibility.</li> <li>❖ Notion of iterative computation and control flow: for, while,</li> </ul>  |                      |



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|           |    |   | flowcharts, decision trees and pseudo code; write a lot of programs: interest calculation, primarily testing, and factorials.  |  |
| September | 13 | Programming and Computational Thinking (PCT-1) II | <ul style="list-style-type: none"> <li>❖ Idea of debugging: errors and exceptions; debugging: pdb, break points.</li> <li>❖ Lists, tuples and dictionary: finding the maximum, minimum, mean; linear search on list/tuple of numbers, and counting the frequency of elements in a list using a dictionary. Introduce the notion of accessing elements in a collection using numbers and names.</li> <li>❖ Sorting algorithm: bubble and insertion sort; count the number of operations while sorting.</li> <li>❖ Strings: compare, concat, substring; notion of states and transitions using state transition diagrams.</li> </ul> | <b><u>Half Yearly Exam Portion</u></b><br><br>Computer Systems and Organisation (CSO) + Programming and Computational Thinking (PCT-1) I |
| October   | 18 | Data Management (DM-1) I                          | <ul style="list-style-type: none"> <li>❖ Relational databases: idea of a database and the need for it, relations, keys, primary key, foreign key; use SQL commands to create a table, keys, foreign keys; insert/delete an entry, delete a table.</li> </ul>   |  |
| November  | 22 | Data Management (DM-1) II                         | <ul style="list-style-type: none"> <li>❖ SQL commands: select, project, and join; indexes, and a lot of in-class practice.</li> <li>❖ Basics of NoSQL databases - Mongo DB.</li> </ul>   |  |
| December  | 18 | Society, Law and Ethics (SLE-1) - Cyber safety    | <ul style="list-style-type: none"> <li>❖ Cyber safety: safely browsing the web, identity protection, confidentiality, social networks, cyber trolls and bullying</li> <li>❖ Appropriate usage of social networks: spread of rumours, and common social networking sites (Twitter, LinkedIn, and Facebook) and specific usage rules.</li> <li>❖ Safely accessing web sites: adware, malware, viruses, Trojans</li> <li>❖ Safely communicating data: secure connections, eavesdropping, phishing and identity verification.</li> </ul>   |  |
| January   | 26 | <b>Revision for PT3 &amp; Final / Annual Term</b> |  | <b><u>Final / Annual Term Portion</u></b><br><br>Whole Syllabus  |

**D.A.V. Public School**  
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**Sector – 3 Dhurwa Ranchi-4**

**Class XII Computer Science Syllabus(2019-2020)**

| Months | No. of Working Days | Unit / Chapters                                   | Sub Topics  | Exam / Tests Portion  |
|--------|---------------------|---|---|---|
| April  | 24                  | Computer Networks (CN) I                          | <ul style="list-style-type: none"> <li>❖ Structure of a network: Types of networks: local area and wide area (web and internet), new technologies such as cloud and IoT, public vs. private cloud, wired and wireless networks; concept of a client and server.</li> <li>❖ Network devices such as a NIC, switch, hub, router, and access point.</li> <li>❖ Network stack: amplitude and frequency modulation, collision in wireless networks, error checking, and the notion of a MAC address, main idea of routing. IP addresses: (v4 and v6), routing table, router, DNS, and web URLs, TCP: basic idea of retransmission, and rate modulation when there is congestion (analogy to a road network), Protocols: 2G, 3G, 4G, Wi-Fi. What makes a protocol have a higher bandwidth?</li> </ul> |   |
| May    | 15                  | Computer Networks (CN) II                         | <ul style="list-style-type: none"> <li>❖ Basic network tools: traceroute, ping, ipconfig, nslookup, whois, speed-test.</li> <li>❖ Application layer: HTTP (basic idea), working of email, secure communication: encryption and certificates (HTTPS), network applications: remote desktop, remote login, HTTP, FTP, SCP, SSH, POP/IMAP, SMTP, VoIP, NFC.</li> </ul>   |   |
| June   | 12                  | Programming and Computational Thinking (PCT-2) I  | <ul style="list-style-type: none"> <li>❖ Revision of the basics of Python</li> <li>❖ Functions: scope, parameter passing, mutable/immutable properties of data objects, pass arrays to functions, return values, functions using libraries: mathematical, and string functions.</li> <li>❖ File handling: open and close a file, read, write, and append to a file, standard input, output, and error streams, relative and absolute paths.</li> <li>❖ Using Python libraries: create and import Python libraries</li> </ul>  |   |
| July   | 25                  | Programming and Computational Thinking (PCT-2) II | <ul style="list-style-type: none"> <li>❖ Recursion: simple algorithms with recursion: factorial, Fibonacci numbers; recursion on arrays: binary search</li> <li>❖ Idea of efficiency: performance defined as inversely proportional to the wall clock time, count the number of operations a piece of code is</li> </ul>  | <p style="text-align: center;"><b><u>Half Yearly Exam Portion</u></b></p> <p>Computer Networks (CN) I +<br/>Computer Networks (CN) II +</p> |

|           |    |  |  |  |
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|           |    |  | performing, and measure the time taken by a program. Example: take two different programs for the same problem, and understand how the efficient one takes less time.  | Programming and Computational Thinking (PCT-2) I                           |
| August    | 24 | Programming and Computational Thinking (PCT-2) III | <ul style="list-style-type: none"> <li>❖ Data visualization using Pyplot: line chart, pie chart, and bar chart.</li> <li>❖ Data-structures: lists, stacks, queues.</li> </ul>  |  |
| September | 13 | Society, Law and Ethics (SLE-2)                    | <ul style="list-style-type: none"> <li>❖ Intellectual property rights, plagiarism, digital rights management, and licensing (Creative Commons, GPL and Apache), open source, open data, privacy.</li> <li>❖ Privacy laws, fraud; cyber-crime- phishing, illegal downloads, child pornography, scams; cyber forensics, IT Act, 2000.</li> <li>❖ Technology and society: understanding of societal issues and cultural changes induced by technology.</li> <li>❖ E-waste management: proper disposal of used electronic gadgets.</li> <li>❖ Identity theft, unique ids, and biometrics.</li> <li>❖ Gender and disability issues while teaching and using computers.</li> </ul> |  |
| October   | 18 | Data Management (DM-2) I                           | <ul style="list-style-type: none"> <li>❖ Write a minimal Django based web application that parses a GET and POST request, and writes the fields to a file - flat file and CSV file.</li> </ul>   |  |
| November  | 22 | Data Management (DM-2) II                          | <ul style="list-style-type: none"> <li>• Interface Python with an SQL database</li> <li>• SQL commands: aggregation functions – having, group by, order by.</li> </ul>   |  |
| December  | 18 | <b>Revision for Board Exam</b>                     |  | <p><b><u>Pre Board / Mock I / II Portion</u></b></p> <p>Whole Syllabus</p> |