COMPUTER APPLICATIONS

CLASS IX (Code 165)

(2021-22)

Learning Outcomes

1. Ability to familiarize with basics of computers.
2. Ability to navigate the file system.
3. Ability to create and edit documents, spreadsheets, and presentations.
4. Ability to perform basic data manipulation using spreadsheets and use Indian languages in documents.
5. Ability to send and receive emails, follow email etiquette, and communicate over the internet.
6. Ability to create and upload videos.
7. Ability to safely and correctly use websites, social networks, chat sites, and email.

Distribution of Marks and Periods

Unit No.	Unit Name	Marks	Periods	
			Theory	Practical
1	Basics of information Technology	15	10	05
2	Cyber Safety	10	05	05
3	Office Tools	15	10	55
4	Scratch/Python	10	30	60
5	Lab Exercises	50	-	-
	Total	100	55	125

Unit 1: Basics of Information Technology

- Computer Systems: characteristics of a computer, components of a computer system – CPU, memory, storage devices and I/O devices
- Memory: primary (RAM and ROM) and secondary memory
- Storage devices: hard disk, CD ROM, DVD, pen/flash drive, memory stick
- I/O devices: keyboard, mouse, monitor, printer, scanner, web camera
- Types of software: system software (operating system, device drivers), application software including mobile applications
- Computer networking: Type of networks: PAN, LAN, MAN, WAN, wired/wireless communication, Wi-Fi, Bluetooth, cloud computers
- (private/public)
- Multimedia: images, audio, video, animation

Unit 2: Cyber-safety

- Safely browsing the web and using social networks: identity protection, proper usage of passwords, privacy, confidentiality of information, cyber stalking, reporting cybercrimes
- Safely accessing websites: viruses and malware, adware

Unit 3: Office tools

- Introduction to a word processor: create and save a document.
- 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.
- Insert pictures, change the page setting, add bullets and numbering, borders and shading, and insert tables – insert/delete rows and columns, merge and split cells.
- Use auto-format, track changes, review comments, use of drawing tools, shapes and mathematical symbols.
- Presentation tool: understand the concept of slide shows, basic elements of a slide, different types of slide layouts, create and save a presentation, and learn about the different views of a slide set – normal view, slide sorter view and hand-outs.
- Edit and format a slide: add titles, subtitles, text, background, and watermark, headers and footers, and slide numbers.
- Insert pictures from files, create animations, add sound effects, and rehearse timings.
- Spreadsheets: concept of a worksheet and a workbook, create and save a worksheet.
- 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.
- Use simple statistical functions: SUM (), AVERAGE (), MAX (), MIN (), IF () (without compound statements); embed charts of various types: line, pie, scatter, bar and area in a worksheet.

Unit 4: Scratch or Python

Alternative 1: Educational programming language – Scratch

- Introduction to Scratch.
- Drag and drop commands, creating simple scripts, repeating blocks of commands.
- Discuss x-y plane, create scripts to move the cat (Scratch mascot).
- Create a script to draw diagrams using the pen feature.

OR

Alternative 2: Python ..

- Programming Basics: Algorithms and Flowcharts
- Characteristics of a good program
- Introduction to Python
- A simple "Hello World" program
- Running a Python program

5. Lab Exercises

- Browser settings for a secure connection
- Working with the operating system: Navigation of the file system using a mouse and keyboard.
- Word processing: create a text document; create a letter, report, and greeting card.
- Create a text document with figures in it. It should describe a concept taught in another course.
- Discuss the following in a text document about the basic organisation of a computer: CPU, memory, input/output devices, hard disk.
- Create a text document in an Indian language other than English.
- Create a presentation.
- Create a presentation with animation.
- Include existing images/ pictures in a presentation.
- Animate pictures and text with sound effects in a presentation
- Create a simple spreadsheet and perform the following operations: min, max, sum and average.
- Create different types of charts using a spreadsheet: line, bar, area and pie.
- Write basic Scratch/Python programs.

Breakup of Marks for the Practical:

S.No.	Unit Name	Marks
1.	Lab Test **(30 marks)**	
	Word processing	7
	Handling spreadsheets	7
	Creating presentations	8
	Writing basic Python/Scratch programs	8
2.	Report File + viva **(10 marks)**	
	Report file: • 4 documents each with a word processor, spreadsheet, and presentation tool • At least 4 programs on Scratch/Python	8
	Viva voce (based on the report file)	2
3.	Project (that uses most of the concepts that have been learnt) **(10 marks)**	
	Total Marks	50