

**(E) FOUNDATION OF INFORMATION TECHNOLOGY (FIT)**  
**(CODE No. 165) (Session 2017-18)**

**Learning Outcomes:**

- Understanding organization of a computer system and networking.
- Basic understanding of database design.
- Ability to work on office tools such as word processor, spreadsheet and presentation.
- Ability to apply knowledge and practice on office tools to develop IT applications.
- Ability to use Indian languages in developing an IT application.
- Ability to design HTML webpage.
- Appreciation/awareness of societal impacts of information technology in business. Public services, education, health etc.
- Awareness of basic information security issues.

**Job Opportunities:**

- Upon completion of this optional course on FIT at secondary level, one will be able to assist in IT-enabled office work.

**CLASS - IX**

Theory: 40 Marks

Practical: 60 Marks

Unit	Description	Marks	
		Theory	Practical
Unit I	Basics of Information Technology	10	-
Unit II	Information Processing Tools	25	30
Unit III	Societal Impacts of IT	05	-
Unit IV	IT Applications	-	30
	Total	40	60

## CLASS IX : (THEORY)

Time : 2½ hours

Marks : 40

### Unit I: Basics of Information Technology

Convergence of Technologies: Computer, Communication and Content Technologies.

Computer System: Characteristics of a computer, components of a computer system - CPU (CU & ALU), Memory, Storage Devices and I/O Devices

Memory: Primary (RAM & ROM) and Secondary Memory.

Units of Memory: Byte, Kilobyte, Megabyte, Gigabyte, Terabyte, I/O Devices - Keyboard, Mouse, Printer, Joystick, Scanner, Microphone, OCR, MICR, Light Pen, Barcode Reader, Digital Camera, Web Camera, Speaker, Plotter

Storage Devices: Hard Disk, CD ROM, DVD, Pen/Flash Drive, Memory Stick

Types of Software: System Software (Operating System), Application Software (General purpose application software - Word Processing, Spreadsheet, Presentation, Database Management; Specific purpose application software - (Accounting Management, Reservation System, HR Management, Attendance System, Payroll System, Inventory Control System, Billing System) and Utility Software (Disk/Folder/Files Management, Virus Scanner/Cleaner, Encryption/Decryption Tools)

### Communication Technology:

Computer Networking - LAN, MAN, WAN, Internet, Interspace

Wired Networking Tools: Co-axial Cable, Ethernet Cable, Optical Fiber

Wireless Networking Tools: Bluetooth, Infrared and WiFi

Content Technology:

Data, Information and Multimedia (Picture/Image, Audio, Video, Animation)

### Unit II: Information Processing Tools

Operating System - Basic concepts of Operating System, Operating System: Need for operating system, Functions of Operating System (Processor Management, Memory Management, File Management and Device Management), Types of operating system - Interactive (GUI based), Real Time and Distributed; Commonly used operating systems: UNIX, LINUX, Windows, Solaris, BOSS (Bharat Operating System Solutions); Mobile OS - Android, Symbian.

Basic components of a GUI Window: Desktop, Title Bar, Menu Bar, Status Bar, Scroll Bars (Horizontal and Vertical); Frame; Basic operations of left and right buttons of mouse, Creating Shortcut, Basic Tools: Text Editor, Painting Tool, Calculator, using Mouse and moving icons on the screen, Task Bar, Different types of menu and menu selection, running an application, setting system date and time; viewing files, concept of folders and directories, creating/moving/ renaming/ deleting files and folders, opening and closing Windows, Minimise, Restore and Maximise forms of windows.

## Office Tools

**Word Processing Tools:** Introduction to a Word Processor. Creating and Saving a document. Editing and Formatting a Document: Text Style (B, I, U), Font Type, Size, changing color, alignment of text. Formatting paragraphs with line and/or paragraph spacing. Adding headers and footers, numbering pages, using grammar and spell check utilities, using subscript and superscript, inserting symbols, Print Preview, Printing a document. Inserting Pictures, Page Setting, Bullets and Numbering, Borders and Shading, Format Painter/Paintbrush, Find and Replace, Inserting Tables: inserting, deleting rows and columns, merging cells, splitting cells.

Using auto-format, mail merge, track changes, review comments, usage of drawing tools, shapes and mathematical symbols.

**Presentation Tool:** Introduction to Presentation Graphics, Understanding the concept of Slide Shows, Basic elements of a slide, Different types of Slide Layouts, Creating and saving a Presentation, Different views of a slide: Normal view, Slide Sorter view and Slide Show, Editing and Formatting a slide: Adding Titles, Subtitles, Text, Background, Watermark; Headers and Footers, Numbering Slides; Printing Slides Handouts, Inserting pictures from files, Animating pictures and Text with Sound Effects, Timing Text box, Pictures and Slides, Rehearse Timings, Ungrouping and Grouping Objects (like text, picture).

**Spreadsheet Tool:** Introduction to Spreadsheet, Concept of Worksheet and Workbook, Creating and Saving a worksheet. Working with a spreadsheet: entering numbers, text, date/time, series using Auto Fill, Editing and formatting a worksheet including changing colour, size, font, alignment of text, Inserting or Deleting cells, rows and columns, Formula-Entering a formula in a cell, using operators(+, -, \*, /) in formulae, Relative referencing, Absolute referencing and mixed referencing, Printing a worksheet. Use simple Statistical functions: SUM(), AVERAGE(), MAX(), MIN(), IF() (without compound statements); Embedding Charts of various types: Line, Pie, Scatter, Bar and Area in a worksheet; inserting tables in a worksheet.

## Unit III: Societal Impacts of IT

Benefits of ICT in Education, Healthcare, Governance, Business, Plagiarism, Privacy, Security and Integrity of Information; Intellectual Property Rights, Careers in IT; Design and manufacturing.

## Unit IV: IT Applications

Students are suggested to work on the following areas using Word Processing Tool, Spreadsheet Tool and Presentation Tool.

### Domains:

#### Multi Lingual Documentation:

- Letter Writing - content, context, addressee, Mail-Merge Formal/Informal letter
- Report Writing - content, presentation, context

- Greeting Card - design, context, recipient
- Poster Making - design, context, target group

**Presentation:**

- School Presentation
- Environment (Save Energy) and Pollution (Global Warming)
- Product Advertisement
- Science and Social Science topic from the course
- Trends in Wireless Computing

**Analysis Reporting:**

- School/Class Result with student-wise and subject-wise marks
- Cricket Score Record
- Weather Forecasting Report

## CLASS - IX (Practical)

Time: 4 hours

Marks : 60

### (A) HANDS ON EXPERIENCE

30 Marks

#### 1. Working on Operating System:

To test some of the following basic system operations on file / folder(s):

- Create
- Rename
- Copy / Cut / Paste
- Delete
- Commands related to Text Editor / Drawing Tool

#### 2. Word Processing\*

A document is required to be created for testing the following areas

- Editing and formatting text and paragraph
- Page and paragraph setup
- Inserting symbols and pictures

#### 3. Presentation\*

A presentation is required to be created with 4 slides for testing the following areas:

- Editing and formatting slides
- Inserting pictures and sounds
- Animating pictures and text with sound effects

#### 4. Spreadsheet\*

A spreadsheet is required to be created for testing the following areas:

- Formatting cells and data
- Functions & formulae (Relative, absolute and Mixed reference)
- Charts

\*Printouts of the document(s) should be attached with the answer sheet.

### (B) IT APPLICATION REPORT FILE

15 Marks

Students are supposed to make an IT Application Report File containing real life assignments using Word Processing, Presentation and Spreadsheet Tools on at least 15 topics from the domain mentioned in Unit IV:

- At least 5 documents of Word Processing tools along with mail merge feature
- At least 5 presentations of Presentation tools
- At least 5 spreadsheets with graphs

**(C) IT APPLICATION PROJECT using word processing, spreadsheet and presentation tools** **10 Marks**

**(D) VIVA VOCE** **05 Marks**

Viva based on IT applications report file.

## CLASS - X

Theory: 40 Marks

Practical: 60 Marks

Unit	Description	Marks	
		Theory	Practical
Unit I	Basics of Information Technology	10	-
Unit II	Information Processing Tools	25	30
Unit III	Societal Impacts of IT	05	-
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	Total	40	60

## CLASS - X (THEORY)

Time : 2½ hours

Marks : 40

### Unit I: Basics of Information Technology

Internet: World Wide Web, Web servers, Web Clients, Web sites, Web Pages, Web Browsers, Blogs, News groups, HTML, Web address, E-mail address, URL, HTTP, FTP, downloading and uploading files from remote site;

Services available on Internet: Information Retrieval, Locating sites using search engines and finding people on the net;

Web Services: Chat, email, Video Conferencing, e-Learning, e-Banking, e-Shopping, e-Reservation, e-Governance, e-Groups, Social Networking.

### Unit II: Information Processing Tools

#### Office Tools

Database Management Tool: Basic Concepts and need for a database, Creating a database, DataTypes-Text, Number, Date, Time, Setting the Primary Key, Entering data into a database, Inserting and deleting Fields, Inserting and deleting Records, Field Size, Default Value, Creating Query using Design view.

#### Information Representation Methods

#### Hyper Text Markup Language

Introduction to Web Page Designing using HTML, Creating and saving an HTML document, accessing a web page using a web browser (Google Chrome, Internet Explorer, Mozilla Firefox, Opera, Apple Safari, Net scape Navigator);

Elements in HTML: Container and Empty elements, Designing web pages using the following elements:

HTML, HEAD, TITLE, BODY (Attributes: BACKGROUND, BGCOLOR, TEXT, LINK, ALINK, VLINK, LEFTMARGIN, TOPMARGIN), FONT(Attributes: COLOR, SIZE, FACE), BASEFONT(Attributes: COLOR, SIZE, FACE), CENTER, BR (Break), HR(Horizontal Rule,

Attributes: SIZE, WIDTH, ALIGN, NOSHADE, COLOR) inserting comments, H1..H6 (Heading), P (Paragraph), B (Bold), I (Italics), U (Underline), UL & OL (Unordered List & Ordered List Attributes: TYPE, START), LI (List Item)

Insertion of images using the element IMG (Attributes: SRC, WIDTH, HEIGHT, ALT, ALIGN), Super Script SUP, Subscript SUB, Creating Table using the element TABLE (BACKGROUND, BGCOLOR, WIDTH, CELSPACING, CELLPADDING, BORDER), TR, TH, TD, ROWSPAN, COLSPAN, Internal and External Linking between Web Pages: Significance of linking, A - Anchor Element (Attributes: NAME, HREF, TITLE, MAILTO).

### **XML (Extensible Markup Language)**

Introduction to XML, Difference between XML and HTML with respect to the following: Data separation, data sharing, document structure, tags, nesting of elements, attributes, values. XML Elements - Defining own tags in XML, root elements, child elements and their attributes; Comments in XML, White space and new line in XML, well formed XML documents, validating XML documents, XML Parser, Viewing XML documents in a web browser.

### **Unit III: Societal Impacts of IT**

Information Security: Virus, Worms, Trojans and Anti-Virus Software, Spyware, Malware, Spams, Data Backup and recovery tools and methods, Online Backups, Hacker and Cracker with regard to Computer Data and Applications, Social Networking Information security provisions in e-commerce, Benefits of ICT in Education, Healthcare, Governance, Virtual, School, emergence of Knowledge economy, Impact of ICT on Society:

Knowledge based society, Infomania, Digital Unity and Digital Divide.

### **Unit IV: IT Applications**

Students are suggested to work on the following suggestive areas using Database Management Tool and HTML on topics implementing the tools/elements covered in the course.

#### **Domains:**

##### **Database Design:**

- Personal Data Record File
- School/Class Result Record
- Employee Payroll
- Stock Inventory
- Vehicle Parking Record File

##### **Webpage Design:**

- My Home Page
- My School



- My Family
- Personal Blog with Name, Photo, Areas of Interest, School, State, Country
- School Website - Infrastructure, Facilities, Uniform, Motto, School Pictures, Extra Curricular Activities, Subject and Language Options
- Travel and Tourism
- Statistics on India - State wise Area, Population, Literacy (Enrolment in Primary, Middle, Secondary, Senior Secondary), Gender Ratio
- Environment (Save Energy) and Pollution (Global Warming)

### CLASS - X (Practical)

Time : 4 hours

Marks : 60

**(A) HANDS ON EXPERIENCE**

**30 Marks**

**1. Database Design:\***

- Creating and entering data into a database
- Setting the primary key
- Inserting meaningful data and organising
- Creating Query with the same design view of the table.

**2. Webpage Designing \***

- Adding a title to webpage
- Formatting Text
- Adding Ordered/Unordered Lists
- Writing Text in Paragraphs
- Inserting Image
- Adding content in Tabular Form
- Adding Internal / External links.

The students are supposed to know the tools and style for designing domain specific web pages from real life applications and the topics mentioned in the syllabus.

**3. XML Assignment\***

Students to be asked to create an XML document on the lines of XML concepts covered in theory syllabus.

\*Printouts of the document(s) should be attached with the answer sheet.

**(B) IT APPLICATIONS REPORT FILE**

**15 Marks**

Students are supposed to make an IT Application Report File containing real life assignments using a Database Management Tool and HTML

- 5 Database Solutions
- 8 HTML source code along with browser view
- 2 XML Documents Source Code and View

**(C) IT Application project using database and website design in a domain such as School Management, Public Services Computing, Business Computing.**

**10 Marks**

**(D) VIVA VOCE**

**05 Marks**

Viva based on IT applications report file.