

TOUCHPAD

Computer Applications-X Ver. 2.0

10

TEACHER'S MANUAL

Extended Support for Teachers



www.orangeeducation.in

Teacher's Time Table		B R E A K						
Periods / Days								
		0	I	II	III	IV	V	VI
	Monday							
	Tuesday							
	Wednesday							
	Thursday							
	Friday							
	Saturday							
	Sunday							

[illegible]

DEVELOPMENT MILESTONES IN A CHILD

Development milestones are a set of functional skills or age-specific tasks that most children can do at a certain age. These milestones help the teacher identify and understand how children differ in different age groups.



Age
5 - 8 Years

Physical

- First permanent tooth erupts
- Shows mature throwing and catching patterns
- Writing is now smaller and more readable
- Drawings are now more detailed, organised and have a sense of depth

Cognitive

- Attention continues to improve, becomes more selective and adaptable
- Recall, scripted memory, and auto-biographical memory improves
- Counts on and counts down, engaging in simple addition and subtraction
- Thoughts are now more logical

Language

- Vocabulary reaches about 10,000 words
- Vocabulary increases rapidly throughout middle childhood

Emotional/ Social

- Ability to predict and interpret emotional reactions of others enhances
- Relies more on language to express empathy
- Self-conscious emotions of pride and guilt are governed by personal responsibility
- Attends to facial and situational cues in interpreting another's feelings
- Peer interaction is now more prosocial, and physical aggression declines

“ If you cannot do great things, do small things in a great way. ”

Age
9 - 11 Years

Physical

- Motor skills develop resulting in enhanced reflexes

Cognitive

- Applies several memory strategies at once
- Cognitive self-regulation is now improved

Language

- Ability to use complex grammatical constructions enhances
- Conversational strategies are now more refined

Emotional/ Social

- Self-esteem tends to rise
- Peer groups emerge

Age
11 - 20 Years

Physical

- If a girl, reaches peak of growth spurt
- If a girl, motor performance gradually increases and then levels off
- If a boy, reaches peak and then completes growth spurt
- If a boy, motor performance increases dramatically

Cognitive

- Is now more self-conscious and self-focused
- Becomes a better everyday planner and decision maker

Emotional/ Social

- May show increased gender stereotyping of attitudes and behaviour
- May have a conventional moral orientation

Managing the children's learning needs according to their developmental milestones is the key to a successful teaching-learning transaction in the classroom.

“Family is the most important thing in the world.”

TEACHING PEDAGOGIES



Lesson Plans

A lesson plan is the instructor's road map which specifies what students need to learn and how it can be done effectively during the class time. A lesson plan helps teachers in the classroom by providing a detailed outline to follow in each class.

A lesson plan addresses and integrates three key components:

Learning objectives

Learning activities

Assessment to check the student's understanding

A lesson plan provides an outline of the teaching goals:

Before the class

1. Identify the learning objectives.
2. Plan the lesson in an engaging and meaningful manner.
3. Plan to assess student's understanding.
4. Plan for a lesson closure.

During the class

Present the lesson plan.

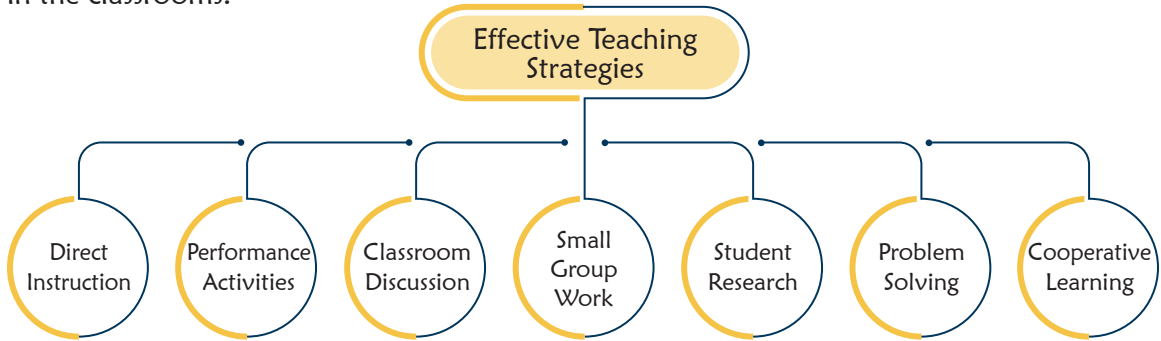
After the class

Reflect on what worked well and why. If needed, revise the lesson plan.

“Knowing yourself is the beginning of all wisdom.”

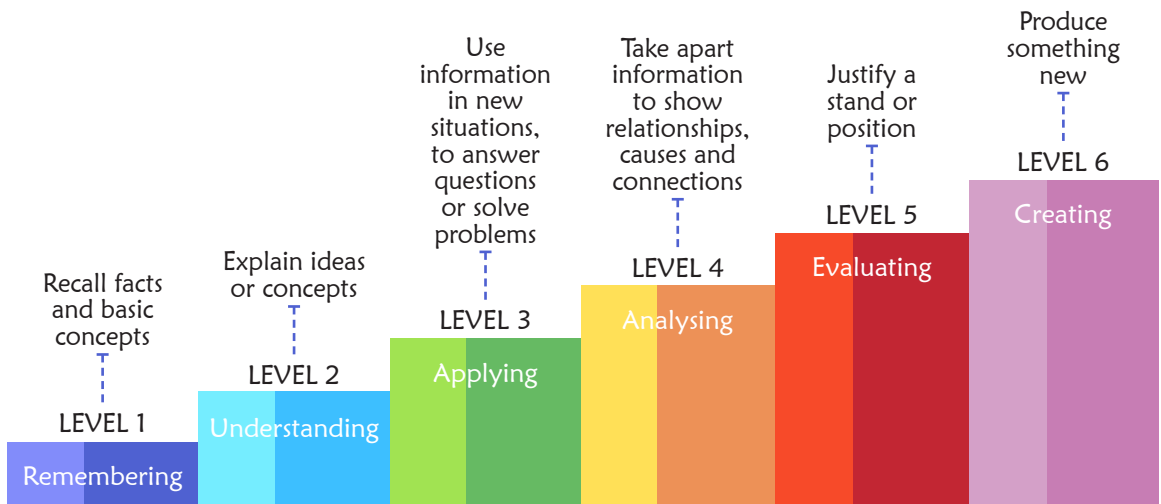
Teaching Strategies

Numerous strategies have evolved over the years to facilitate the teaching-learning process in the classrooms.



Bloom's Taxonomy

Bloom's Taxonomy was created by Dr Benjamin Bloom and several of his colleagues, to promote higher forms of thinking in education instead of rote learning. There are three domains of learning: cognitive (mental), affective (emotional), and psychomotor (physical). However, when we refer to Bloom's Taxonomy we speak of the cognitive domain. Bloom's Taxonomy is a list of cognitive skills that is used by teachers to determine the level of thinking their students have achieved. As a teacher, one should attempt to move students up the taxonomy as they progress in their knowledge.



Teachers should focus on helping students to remember information before expecting them to understand it, helping them understand it before expecting them to apply it to a new situation, and so on.

“ If you have no confidence in self,
you are twice defeated in the race of life. ”

Unit-1: Networking

1 Networking

Teaching Objectives

Students will learn about

- ✦ Internet
- ✦ Internet Terminology
- ✦ E-Mail Protocols
- ✦ HTTP and HTTPS
- ✦ Services Available on the Internet
- ✦ Mobile Technologies
- ✦ History of Internet
- ✦ Internet Protocols
- ✦ Difference between POP3 and IMAP
- ✦ Remote Login Protocols
- ✦ Web Services

Teaching Plan

Number of Periods	
Theory	Practical
5	5

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

Internet is an interconnected Wide Area Network (WAN) of millions of computers that are linked together around the world. With Internet we can share information in the form of data, graphics, sound, software, text, etc. instantly as and when required with a minimum overhead cost.

Internet maps its derivation back to 1969 when it evolved out of an experiment carried by the defence agency of United States. Describe the history of Internet.

Define the internet terminologies:

- Web servers
- Web clients
- Website
- Web page
- Web browser
- Web address
- Blogs
- Newsgroups
- e-mail

TCP/IP stands for Transmission Control Protocol/Internet Protocol. It is a standard Internet communication protocol that allows computers to communicate over long distances. Transmission Control Protocol/ Internet Protocol, is the suite of two protocols i.e., TCP and IP, used to interconnect network devices on the Internet.

FTP stands for 'File Transfer Protocol'. It is a set of rules for transferring files between two computers on Internet. It is a commonly used protocol for exchanging files over any TCP/IP based network. The central computer i.e., FTP server helps the users to upload and download files.

E-mail Protocols are set of rules that help the email client to properly transmit the information to or from the mail server. Let's discuss different e-mail protocols like. SMTP, POP3 and IMAP.

Explain the difference between the following:

Basis for Comparison	POP3	IMAP
Read	To read the mail, it has to be downloaded first.	The mail content can be read before downloading.
Organize	The user cannot organize mails in the mailbox of the mail server.	The user can organize the mails on the server.
Modify	The user cannot create, delete or rename mailboxes on a mail server.	The user can create, delete or rename mailboxes on the mail server.
Content	A user cannot search the content of mail, prior to downloading.	A user can search the content of mail for specific string of character before downloading.

HTTP	HTTPS
The address bar URL begins with "http://"	The address bar URL starts with "https://"
It is unsecure.	It is secure mode for exchanging data.
There is no encryption of data.	Data is encrypted in HTTPS.
It does not require any certificate.	It needs SSL (Secure Socket Layer) certificate.

Explain the students about remote login protocols as it refers to operating an application or software or database of a network or server from a remote location.

The SSH (Secure Shell) protocol establishes secured remote login and secured transfer of data.

Explain the difference between the following:

FTP	SFTP
File Transfer Protocol, often called 'Plain FTP'.	SSH File Transfer Protocol, often called 'Secure FTP'.
Clear-text password sent over the network.	Password and Data Transfer is encrypted.
Typically runs over TCP port 21.	Typically runs over TCP port 22.

Discuss about SCP and Telnet.

Also tell them about the services available on the Internet such as search engine, its category as well as how does it work?

A web service can be defined as a piece of software or application or cloud technology that is available online and provides standardized web protocols (HTTP or HTTPS) to communicate and exchange messages.

Explain them about web chatting, web conferencing.

Define the following terms:

- e-Learning
- e-Shopping
- e-Group
- e-Banking
- e-Reservation
- Social Networking
- e-Commerce
- e-Governance

The communication through mobile cellular began during 1980. Since then mobile technology has undergone considerable changes and has resulted into portable mobile communication and smartphones that have become very popular in last few years.

Tell the students about all the generation of mobile technologies.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain the following:

- | | |
|-------------------------------------|---------------------------------------|
| a. Internet | b. History of Internet |
| c. Internet Terminology | d. World Wide Web (WWW) |
| e. Internet Protocols | f. E-Mail Protocols |
| g. Difference between POP3 and IMAP | h. HTTP and HTTPS |
| i. Remote Login Protocols | j. Services Available on the Internet |
| k. Web Services | l. Mobile Technologies |

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 39 to 49 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

Unit-2: HTML

2

Introduction to HTML

Teaching Objectives

Students will learn about

- | | |
|-----------------------------|--|
| ★ History of HTML | ★ Evolution of HTML |
| ★ Features of HTML | ★ Prerequisites to Work with HTML |
| ★ Basic Terminologies | ★ Fundamental Structure of HTML Document |
| ★ Creating an HTML Document | ★ Viewing the Web Page in Web Browser |
| ★ Attributes | ★ Presentation Tags |
| ★ Comments | ★ <H1> to <H6> Heading Tags |
| ★ Character Formatting Tags | ★ <P> Tag |
| ★
 Tag | ★ Lists in HTML |

Number of Periods	
Theory	Practical
12	20

Teaching Plan

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

HTML is a standardised system to describe the structure of text based information in a document by denoting certain text as heading, paragraphs, lists and so on and by supplementing the text with interactive forms, embedded images and other objects. Technically HTML is not a programming language.

Explain the history of HTML from SGML to HTML (Tim Berners-Lee, 1990) to the students.

Explain the features, evolution and basics of HTML to the students.

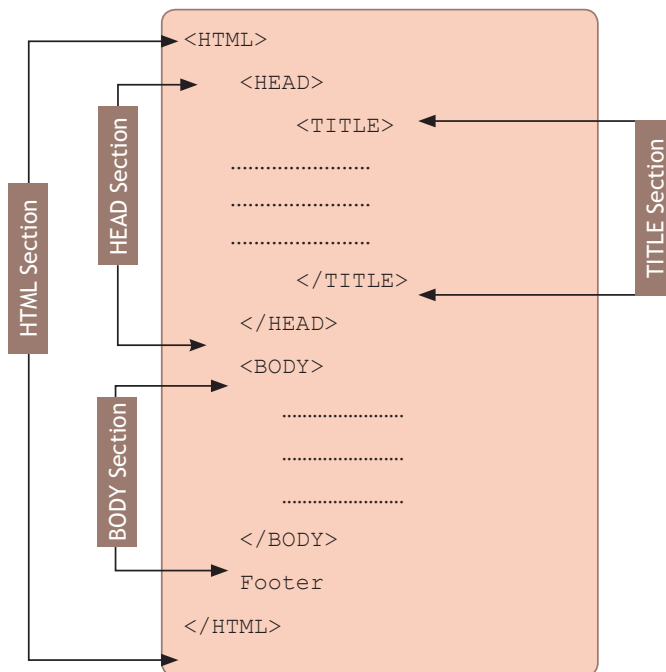
To work in HTML, the user needs:

- Text Editor
- Web Browser

Make them learn about some basic terms related to HTML. These are:

- Tag
- Element
- Attribute

HTML document consists of text that comprises the contents of the document and the tags that define the structure and appearance of the document. The basic structure of an HTML document can be classified into different elements or sections.



An HTML document can be created by using simple text editor like Notepad, KWrite or HTML editor like Front Page, etc. To view the content of the document, one can use a web browser like Google Chrome, Microsoft Edge, Mozilla, Firefox, Opera, etc.

Attributes refer to additional features that can be added with the tags, to apply or to change and enhance the appearance of different parts of a web page.

HTML provides various presentation tags that help in enhancing the appearance of the web page.

Identify basic HTML tags and their usage in webpage creation.

Explain the process of creating and saving HTML Documents to the students.

Define the following attributes used in the <BODY> tag:

- BGCOLOR
- BACKGROUND
- ALINK
- LEFTMARGIN
- TEXT
- LINK
- VLINK
- TOPMARGIN

HTML provides various presentation tags that help in enhancing the appearance of the web page.

Comments are used to add remarks to the programs created in any language. The comments are not executed by the compilers or browsers of the programs but are displayed in the source programs as they are. They provide additional information about the program.

Heading tags are container tags. The heading tags (from <H1> to <H6>) are used to add headings in the HTML document. Headings are displayed in larger and bolder fonts, than the normal text size. Headings are also used to organize the contents of the text.

In HTML, there are many character formatting tags which are also called font-style tags. These tags help to change the appearance of text with their predefined effects.

There are two types of lists which can be displayed in an HTML document:

- Ordered or Numbered List
- Unordered or Unnumbered List

HTML supports a list style which is called definition list or description list where terms are listed along with their description like in a dictionary or encyclopaedia. The definition list is the ideal way to present a glossary, list of items, or other name/value list.

To achieve the desired effect or result as a whole, all the different tags which have been used can be combined.

Extension

Ask the students some oral questions based on this chapter.

Q. Write a note on:

- a. History of HTML
- b. Evolution of HTML
- c. Features of HTML
- d. Prerequisites to Work with HTML
- e. Basic Terminologies
- f. Fundamental Structure of HTML Document
- g. Creating an HTML Document
- h. Viewing the Web Page in Web Browser
- i. Attributes
- j. Presentation Tags



- k. Comments
- m. Character Formatting Tags
- o.
 Tag
- q. Description List

- l. <H1>...<H6> Heading Tags
- n. <P> Tag
- p. Lists in HTML
- r. Combining Tags

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 99 to 112 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

3

More About HTML

Teaching Objectives

Students will learn about

- ✦ Tag
- ✦ <SUB> Tag
- ✦ <PRE> Tag
- ✦ Linking
- ✦ Embedding Multimedia Objects
- ✦ <SUP> Tag
- ✦ <BLOCKQUOTE> Tag
- ✦ <TABLE> Tag
- ✦ HTML Form

Number of Periods

Theory

10

Practical

15

Teaching Plan

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

The (Image) tag is an empty tag. The attribute SRC (Source) is used with the IMG tag to specify the location and name of the image file.

Define the following attributes are used with tag:

- SRC
- ALIGN
- BORDER
- WIDTH
- HEIGHT
- HSPACE
- VSPACE
- ALT

<SUP> is a container tag. It is used to display the text in superscript form. The text enclosed within this tag is raised to the power form (exponential). This tag is helpful to write arithmetic and scientific notations.

<SUB> is a container tag. It is used to display the blocked text in subscript form. The enclosed text is displayed as the base of the normal text. This tag is generally used to write formula and chemical equations.

<BLOCKQUOTE> is a container tag. It contains block-level tags. This tag is used to display the text after leaving a space of two indents from its side margin. The cite attribute in the <BLOCKQUOTE> tag specifies the source of the quotation.

The <PRE> tag is used to display the blocked text exactly as it is, with fixed font, spaces, tab spaces returns, etc. The main purpose of this tag is to display the text in a tabular or columnar format exactly as it is typed in the text editor.

<TABLE> tag is used to create table in a web page. It is used within the body of the HTML document. To create a table in HTML (web pages), it is necessary to create rows and columns. The TR (Table Row) tag and TD (Table Data) tag are used to create grid of rows and enter data in the grid.

<TH> tag is used to denote a cell as heading cell.

Define the following attributes that are used with <TABLE> tag:

- BORDER
- CELLPADDING
- CELLSPACING
- HEIGHT
- WIDTH
- BGCOLOR
- ALIGN Attribute

The most useful feature of HTML is to link the text or image or a part of the same document to another document. HTML supports two kinds of linking: External Linking and Internal linking.

Mailto is used to create a link that opens the e-mail compose box to write mails and send a new e-mail message.

An HTML form is an interface of a web page that facilitates the user to enter data (such as name, e-mail address, password, phone number, etc.) that is to be sent to the server for further processing.

Explain <INPUT> tag and its attributes to the students.

You can add audio and video in your web page by using the <AUDIO> and <VIDEO> tags.

Extension

Ask the students some oral questions based on this chapter.

Q. Explain the following:

- a. Tag
- b. <SUP> Tag
- c. <SUB> Tag
- d. <BLOCKQUOTE> Tag
- e. <PRE> Tag
- f. <TABLE> Tag
- g. Linking
- h. HTML Form
- i. Embedding Multimedia Objects

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 153 to 163 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

4

Cascading Style Sheets

Teaching Objectives

Students will learn about

- ✦ CSS Syntax and Selectors
- ✦ Link Style Sheet
- ✦ Background Color
- ✦ CSS Border

- ✦ CSS Margins
- ✦ CSS Outline
- ✦ Aligning Text

- ✦ CSS Height And Width
- ✦ CSS Font
- ✦ CSS Float

Number of Periods	
Theory	Practical
8	15

Teaching Plan

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

'Cascading Style Sheet' is commonly referred as CSS. CSS is a simple design language which enables to simplify the process of making web pages.

A CSS comprises of style rules that are interpreted by the web browser and then applied to the corresponding elements in a document. Its style rule is made of two parts i.e., 'Selector' and 'Declaration'. 'Declaration' can be further categorised into 'Property' and 'Value'. Also, explain its syntax.

Selectors can be defined in various ways like type selector.

The universal selector is represented by an asterisk (*) and is used to apply styles to all elements on a web page.

It handles and describes how an HTML web page will be presented on a web browser. It helps to save lot of time as one design layout can be used to make more number of web pages.

Define the three ways of inserting or linking a style sheet:

- External Style Sheet
- Internal Style Sheet
- Inline Style

The Background Color property of style sheet is used to change the background colour of an element.

The CSS border properties enable to specify the style, width and colour of a border.

CSS 'margin' properties enable to create space around an HTML element, outside any border. It is also possible to use negative values to overlap the content.

The height and width properties enable to set the height and width of an element. It is also used to set the height and width of the area inside the border, margin, etc. of the element.

An outline is a line that is drawn around elements, to make the element "stand out".

CSS font property is used to define the font, size and the style of the text. Some of the commonly used font properties are font-family, font-style, font-size, etc.

The 'text-align' property is used to align the text in desired position. Left, Right, Center, Justify are the types of available text alignment.

The 'float' property is used for positioning and formatting content. It wraps the text around the images. The float property can be set with values such as left, right, none, etc.

Extension

Ask the students some oral questions based on this chapter.

Q. Write a short note on the following:

- | | |
|-------------------------|---------------------|
| a. Link Style Sheet | b. Background Color |
| c. CSS Border | d. CSS Margins |
| e. CSS Height And Width | f. CSS Outline |
| g. CSS Font | h. Aligning Text |
| i. CSS Float | |

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 184 to 192 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

Unit-3: Cyber Ethics

5

Cyber Ethics

Teaching Objectives

Students will learn about

- | | |
|-------------------------------|--------------------------|
| ✦ Netiquettes | ✦ Software License |
| ✦ Intellectual Property Right | ✦ Plagiarism |
| ✦ Digital Property Right | ✦ Freedom of Information |
| ✦ Digital Divide | ✦ E-Commerce |

Number of Periods

Theory

Practical

5

10

Teaching Plan

Explain the following to the students in detail with proper examples, functions, purpose and real-life routine solutions:

‘Cyber Ethics’ is an ethical approach or responsibility that should be followed while using the application or resources of Internet.

Netiquette (net + etiquette) can be defined as the behaviour or informal guidelines that are followed by the users of the Internet. It includes common sense, courtesy and proper dialects while using tools of computer technology and thus signifies the culture amount Internet users.

E-mail netiquettes are the basic etiquettes and courtesy that should be followed while sending e-mails.

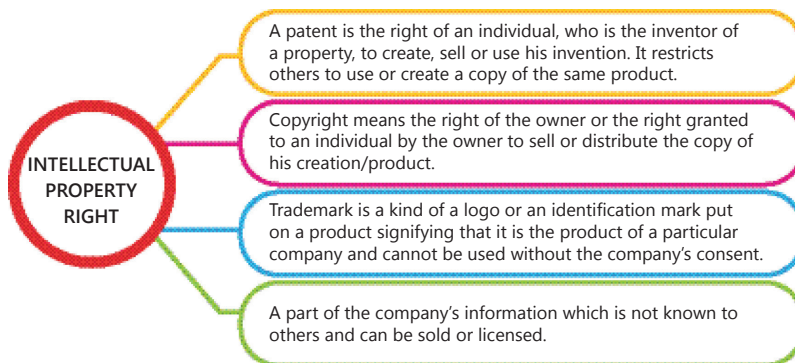
Chat and Instant Messaging (IM) are Internet features that allow users to interact with people in real time. With such features, simultaneous or synchronous interaction is made possible either in a group or public forum or in a private space among two or more individuals over the net.

Software License is the authorisation to use a software. Most of the software are licensed rather than being sold, which means buyers are never the actual owners of the software, although they may be able to use it without any time limit or may become owner of a copy of such software.

Define the following types of software:

- Proprietary Software
- Shareware
- Freeware
- Open Source Software

'Intellectual Property Right' is the legal right that covers the privileges of an individual who has created or invented something with his own intellectual ability or creativity and is the owner of his work.



Plagiarism is the act of copying someone else's work and publishing and pretending as if it is one's own work. This can include copying of texts, media and even ideas.

'Digital Property Right' is the legal right that covers the privileges of an individual for the security of his digital property. Digital property includes e-mails, word processing documents, spreadsheets, pictures, audio files, movies, Internet accounts credentials and other rights in the digital world, including contractual rights, intellectual property rights, etc.

Freedom of Information is the right to obtain information from any public authority by making a request in writing or through electronic means, to the concerned Information Officer or department specifying the particulars of the information sought by him.

Digital divide is a term that refers to the gap between those who have access to the resources of modern information and communications technology, and those that have restricted access. This technology can include data, resources of mobile technology, Internet, IT and ITES, etc. Also, describe the causes of digital divide.

E-commerce, also known as electronic commerce or Internet commerce, refers to the buying or selling of goods or services over the Internet.

While doing e-commerce, each stakeholder (either seller or buyer) must follow ethical conduct which are as follows:

- E-commerce Privacy
- E-commerce Fraud

Secure Data Transmission is an essential part of any transaction that takes place over the Internet. Customers may lose their faith in e-business if there is any chance of leak in its security.

Extension

Ask the students some oral questions based on this chapter.

Q. Define the following:

- | | |
|--------------------------------|---------------------------|
| a. Netiquettes | b. Software License |
| c. Intellectual Property Right | d. Plagiarism |
| e. Digital Property Right | f. Freedom of Information |
| g. Digital Divide | h. E-Commerce |

Evaluation

After explaining the chapter, let the students do the exercises given on Pages 202 to 212 in the main course book as **Solved Exercise** and **Unsolved Exercise**.

