1. Computer–Hardware Components

One Touch Learn

A. 1. a.   2. a.   3. c.   4. b.   5. a.   6. a.

B. 1. F   2. T   3. F   4. F   5. T

C. 1. output device   2. Storage devices   3. 3-D camera

4. input devices   5. radio frequency

Let's Do It

A.
1. Motherboard & Disk drive are the hardware attached inside the CPU box.
2. A smart board is a large interactive screen used in classrooms. You can write on it and interact with it using touch or special pens (input).
3. Yes, a mouse and a keyboard can be wireless.
4. A disk drive is used to read from and write to storage disks. Disk drives can be located internally within the CPU box or in a separate external enclosure.
5. CD- RW stands for Compact Disc Rewritable.
6. Skylake is Intel's multi-core chip code which boosts graphics and applications while improving battery life in laptops.

B.
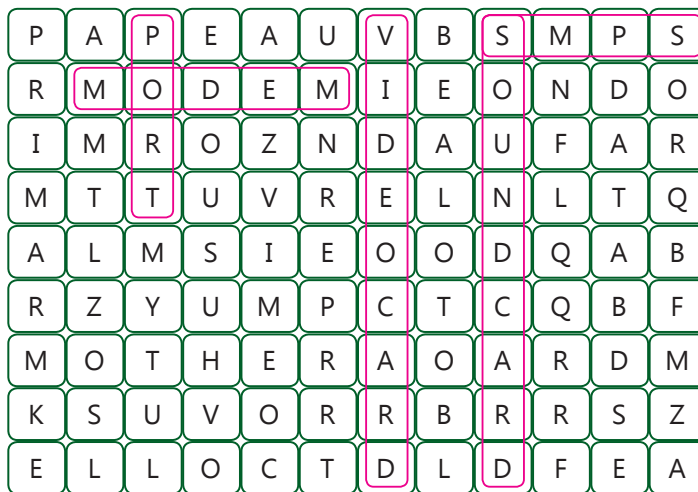1. The differences between Input and Output Devices are as follows:

Input Devices	Output Devices
a. Input devices are devices through which a computer accepts data and instructions.	a. Output devices are devices through which a computer displays the information and result of computation to the user.
b. Example of the input devices are: Mouse, Keyboard	b. Example of the output devices are: Monitor, Printer

2. The Central Processing Unit (CPU) is a processor and sometimes called a microprocessor. It is the computer's brain as it performs all the calculations and runs programs, managing operations and executing the basic instructions that control the computer.

3. Virtual Keyboard is operated by typing on a touch-sensitive surface rather than pressing physical keys. It is essentially a software component, as it does not consist of physical parts.

4. A port is a slot on the motherboard where you connect various computer components, such as a keyboard, mouse, monitor, etc. Three types of ports are:

   1. Serial Port
   2. Universal Serial Bus (USB) Port
   3. Parallel Port

5. Switched Mode Power Supply (SMPS) is used to control power supply. It is also known as the power supply unit of the computer. It takes Alternating Current (AC) from a source, converts it into low voltage Direct Current (DC), and then supplies it to other parts of the computer. It has a switching regulator to control the output voltage and an in-built fan to reduce heat.

C. 1. Akhil can use a graphics tablet to draw directly on the computer screen.

2. Divya should use a plotter for printing good quality drawings and building construction plans.

Higher Order Thinking Skills (HOTS)

1. Memory card

2. He should use a projector to display the presentation on a big screen and speakers to ensure the audience can hear him clearly.

Crack The Code

P	A	P	E	A	U	V	B	S	M	P	S
R	M	O	D	E	M	I	E	O	N	D	O
I	M	R	O	Z	N	D	A	U	F	A	R
M	T	T	U	V	R	E	L	N	L	T	Q
A	L	M	S	I	E	O	O	D	Q	A	B
R	Z	Y	U	M	P	C	T	C	Q	B	F
M	O	T	H	E	R	A	O	A	R	D	M
K	S	U	V	O	R	R	B	R	R	S	Z
E	L	L	O	C	T	D	L	D	F	E	A

FUN in LAB

Do it yourself.

2. Number System

A. 1. c.   2. a.   3. a.   4. a.

B. 1. T   2. T   3. F   4. T   5. F

C. 1. 0   2. 16   3. 10   4. 8   5. 2

Let's Do It

A. 1. The Octal Number System has a base of 8 and uses 8 digits: 0 to 7.

     2. In 1 nibble there are 4 bits.

     3. The total number of digits used in a number system is called its base or radix.

B. 1. A number system is simply a method of counting. There are four types of number systems:

     (i)   Decimal number system   (ii)   Binary number system

     (iii)   Octal number system   (iv)   Hexadecimal number system

     2. To know the rules to convert a decimal number into a binary number, follow these steps:

     Step 1   Divide the decimal number by 2 (the base of the binary number system).

     Step 2   Note down the quotient and the remainder.

     Step 3   Divide the quotient obtained again by 2 and note down the resulting quotient and remainder.

     Step 4   Repeat the procedure till you reach a quotient less than 2.

     Step 5   Arrange the final quotient and all remainders in reverse order (from bottom to top) to get the binary number. We will get our binary number.

     3. The rules to subtract two binary numbers are:

X	Y	X – Y
0	0	0 – 0 = 0
0	1	0 – 1 = 1 (borrow 1, so that 10 – 1 = 1)
1	0	1 – 0 = 1
1	1	1 – 1 = 0

C. 1. $(10111.011)_2$ = $1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

                      = $1 \times 16 + 0 + 1 \times 4 + 1 \times 2 + 1$

                      = $16 + 4 + 2 + 1$

                      = $(23)_{10}$

2.

| | 0 | 10 | 10 | | 10 | — Borrow |

$$
\begin{array}{ccccccc}
 & \textcircled{0} & \textcircled{10} & \textcircled{10} & & \textcircled{10} & \text{— Borrow} \\
 & 1 & 0 & 0 & 1 & 1 & 0 \\
- & & & 1 & 1 & 0 & 1 \\
\hline
 & & 1 & 1 & 0 & 0 & 1 \\
\hline
\end{array}
$$

3. (a)

$$
\begin{array}{cccc}
 & 1 & 0 & 0 & 0 \\
+ & & 1 & 0 & 1 \\
\hline
 & 1 & 1 & 0 & 1 \\
\hline
\end{array}
$$

(b) $\textcircled{1}\ \textcircled{1}\ \textcircled{1}$ —— Carry

$$
\begin{array}{cccccc}
 & & 1 & 0 & 1 & 1 \\
+ & & & 1 & 0 & 1 \\
\hline
 & 1 & 0 & 0 & 0 & 0 \\
\hline
\end{array}
$$

(c) $\textcircled{1}$ —— Carry

$$
\begin{array}{ccccc}
 & 1 & 0 & 0 & 1 \\
+ & & 1 & 0 & 1 \\
\hline
 & 1 & 1 & 1 & 0 \\
\hline
\end{array}
$$

(d) $\textcircled{1}\ \textcircled{1}\ \textcircled{1}$ —— Carry

$$
\begin{array}{ccccc}
 & 1 & 1 & 1 & 1 \\
+ & 1 & 1 & 1 & 1 \\
\hline
 1 & 1 & 1 & 1 & 0 \\
\hline
\end{array}
$$

(e) $\textcircled{1}$ —— Carry

$$
\begin{array}{cccccc}
 & 1 & 1 & 0 & 0 & 1 \\
+ & 1 & 0 & 1 & 0 & 1 \\
\hline
1 & 0 & 1 & 1 & 1 & 0 \\
\hline
\end{array}
$$

4. (a)

2	39 – 4
2	19 – 1
2	9 – 1
2	4 – 1
2	2 – 0
	1 – 0

Hence, $(39)_{10} = (100111)_2$

(b)

2	72
2	36 – 0
2	18 – 0
2	9 – 0
2	4 – 1
2	2 – 0
	1 – 0

Hence, $(72)_{10} = (1001000)_2$

(c)

2	128
2	64 – 0
2	32 – 0
2	16 – 0
2	8 – 0
2	4 – 0
2	2 – 0
	1 – 0

Hence, $(128)_{10} = (10000000)_2$

(d)

2	55
2	27 – 1
2	13 – 1
2	6 – 1
2	3 – 0
	1 – 1

Hence, $(55)_{10} = (110111)_2$

(e)

2	173
2	86 – 1
2	43 – 0
2	21 – 1
2	10 – 1
2	5 – 0
2	2 – 1
	1 – 0

Hence, $(173)_{10} = (10101101)_2$

D. 1. $(10011011)_2$

2. Because there are only four types of number systems.

Higher Order Thinking Skills (HOTS)

1. Born in 9th month → That's September

Date of birth is "10111" in binary

Let's convert 10111_2 to decimal:

$= 1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$
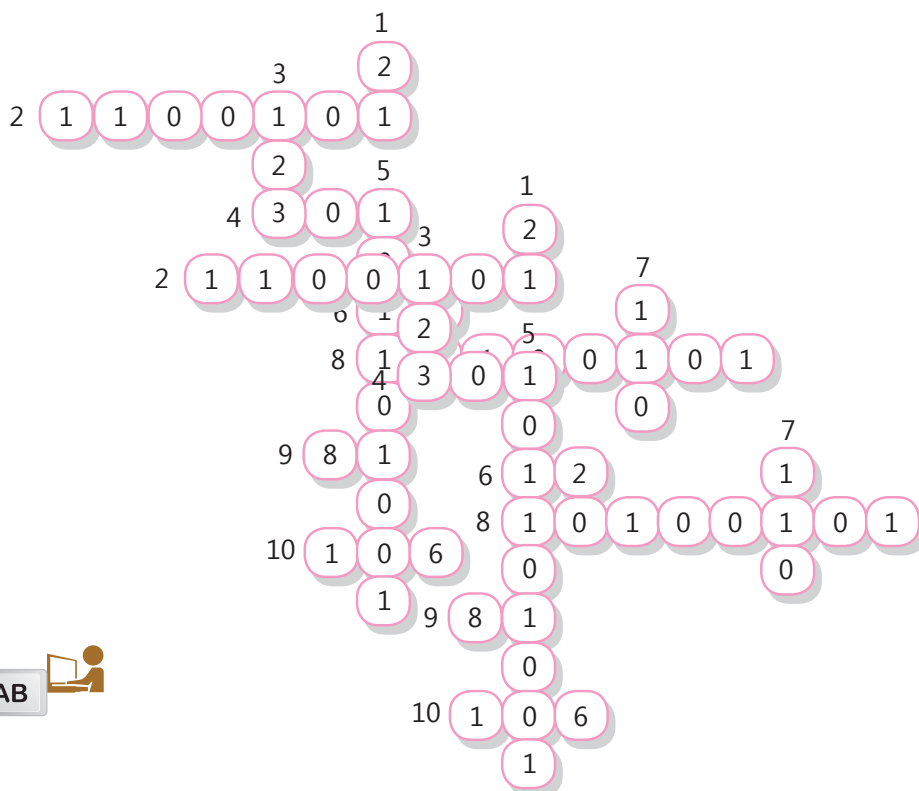
$= 16 + 0 + 4 + 2 + 1 = 23$

23rd September

2. 101110_2 to decimal:

$= 1 \times 2^5 + 0 \times 2^4 + 1 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 0 \times 2^0$

$= 32 + 0 + 8 + 4 + 2 + 0 = 46$

Amaan's number: 46

Crack The Code

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3. Computer Virus

A. 1. d. 2. a. 3. b. 4. c.
     5. d. 6. a. 7. a. 8. d.

B. 1. T 2. T 3. F 4. T 5. F

C. 1. Worm 2. Antivirus 3. Firewall 4. Trojan Horse

Let's Do It

A. 1. Trojan horse is a type of malware. It conceals itself inside the software that seems legitimate.

2. The use of antivirus program is to identify, prevent, and remove malware from the computer system.

3. Boot sector virus is one of the most destructive types of computer viruses that infects the boot sector or the Master Book Record (MBR) of hard disks.

4. MBR stands for Master Boot Record.

B. 1. Malware is a broad term for various types of malicious software designed to damage, disrupt, or gain unauthorised access to a computer system. There are different types of malware programs that can affect your computer similarly to viruses. Some of these include worms, trojan horse, spywares, ransomware, rootkits and backdoors.

2. A computer virus is a 'piece of code' or program developed to corrupt the data or program files stored on the computer system, whereas a computer worm is a type of malware that can replicate itself without any human interaction.

3. There are several signs that a computer may be infected with a virus:

   • **Slowdown:** A noticeable decrease in the computer's processing speed.

   • **Pop-ups:** Unexpected or excessive pop-ups appearing on the system.

   • **Crash:** Frequent system crashes or Blue Screen of Death (BSOD) errors.

   • **Loss of Files:** Abrupt or unexplained deletion of files.

   • **Unusual Activity of Messages or Programs:** Automatic opening or closing of programs, unexpected restarts, and strange or unknown windows appearing during boot-up.

   • **Unusual Network Activity:** Excessive data transfer or unusual network activity even when all applications are closed.

4. You can protect your PC from viruses by:

   i. Download only legal softwares.

   ii. Do not open emails or attachments from unknown source.

  iii. Do not click on pop-up ads or links from unknown sources.

  iv. Do not download music, program or games from unknown sources on the Internet.

  v. Install an antivirus program in your computer system.

  vi. Scan Pen drives, CDs, and any other external storage devices for viruses before opening on computer.

C. 1. Yes, it is highly likely that Neha's USB drive contains a virus or malware. Steps Neha should take:

  i. Disconnect the USB drive immediately.

  ii. Do not open any unknown files.

  iii. Run a full system scan using antivirus software.

  iv. Use another antivirus to scan the USB drive.

 2. Yes, this is most likely a ransomware attack. Actions Anil should take:

  i. Do not pay the ransom.

  ii. Disconnect the computer from the network.

  iii. Use antivirus or anti-malware software.

Higher Order Thinking Skills (HOTS)

1. Yes, a virus could definitely be the reason why a computer starts behaving strangely. Once a virus infects a computer, it can disrupt the normal functioning of the computer's resources, such as processing power, memory, and installed programs.

- **Slowdown:** A noticeable decrease in the computer's processing speed.
- **Unusual Activity of Messages or Programs:** Automatic opening or closing of programs, unexpected restarts, and strange or unknown windows appearing during boot-up.

Types of viruses that could be responsible:

i. Program File Virus   ii. Boot Sector Virus

2. Yes, this is most likely a malware issue, in the form of spyware. Malware is a broad term for various types of malicious software designed to damage, disrupt, or gain unauthorised access to a computer system. There are several methods of eradication for malware. Some of them include:

 i. Removing the code from an infected file that corresponds to a virus

 ii. Removing the infected file

 iii. Quarantining the infected file, which involves moving it to a location where it cannot be run

 iv. Separating all the infected files and applications so that the infection cannot spread further

A.
1. Worms
2. Trojan
3. Ransomware
4. Program File Virus
5. Antivirus

B.

A	I	I	B	A	C	K	D	O	O	R	I
T	L	K	A	R	O	K	L	W	U	B	T
O	I	E	T	O	N	T	R	O	J	A	N
A	R	O	O	T	K	I	T	R	N	B	H
I	M	T	C	T	T	E	K	M	N	I	E
W	S	P	Y	W	A	R	E	M	Y	T	R
E	L	O	A	I	L	M	I	A	R	W	S

FUN in LAB

Do it yourself.

4. Ethics and Safety Measures in Computing

One Touch Learn

A.	1. a.	2. c.	3. c.	4. c.	5. b.
B.	1. T	2. F	3. F	4. T	5. F
C.	1. Trademark	2. Plagiarism	3. Patent	4. Phishing	5. Spam

Let's Do It

A.
1. Software piracy refers to the illegal use, distribution, or duplication of software.
2. Hacking refers to unauthorised attempts to access a computer system to either destroy it or steal important data.
3. Patents and Copyright are the two examples of intellectual property rights.

4. Two ways to stop Cyberbullying are:
   (i) Be cautious when sharing private information online, as it can be accessed by people with malicious intentions.
   (ii) Avoid disclosing personal details like your address, phone number, or school name to unknown individuals online.
5. Computer Ethics are the common guidelines that we need to follow while using the computer.

B. 1. **Patent:** A patent gives an inventor exclusive rights to make, use, and sell their invention for a specified period.

   Trademark: A trademark is a symbol, word, or design legally registered to represent a company or product. It helps protect brand names, logos, and product designs.

2. The Internet, also called "the Net" or "the Network of Networks," refers to the International Network. It is a global network that allows users in various locations around the world to communicate and exchange information with one another.

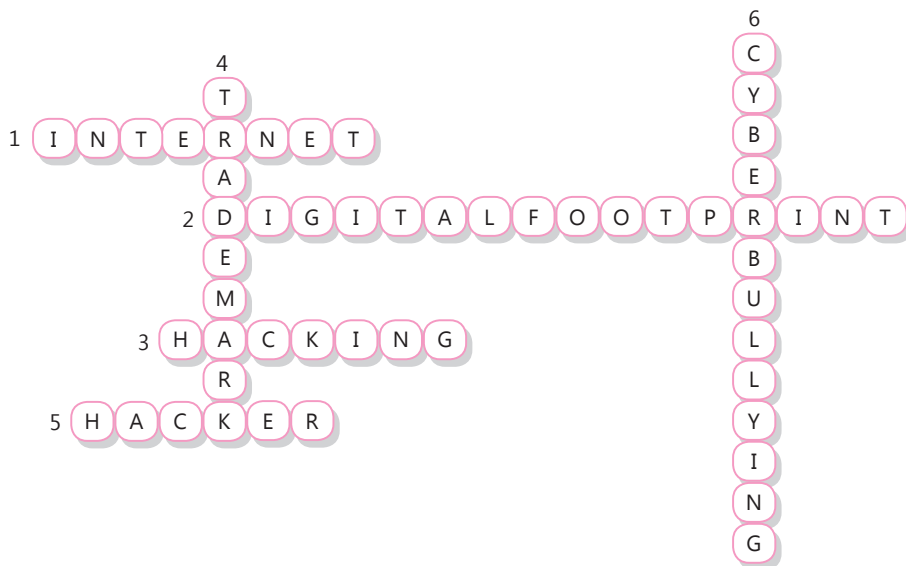   Three disadvantages of Internet:
   (i) **Wastage of Time:** Excessive use of the Internet can lead to addiction, causing individuals to spend excessive amounts of time surfing and engaging in online activities, often to the detriment of other responsibilities.
   (ii) **Virus and Spam Attacks:** The Internet has increased the prevalence of virus attacks, which can result in the loss of data and damage to programs.
   (iii) **Loss of Personal Information:** Sharing personal information online can expose individuals to the risk of misuse by cybercriminals.

3. Three protective measures to avoid Plagiarism:
   (i) We should always mention the source of information.
   (ii) We should rephrase the content as per our requirement to avoid Plagiarism.
   (iii) We should use quotation marks to write the word or lines written by someone else.

4. Three ways to stay protective online:
   (i) Be cautious while using your password online.
   (ii) Don't entertain strangers or suspicious e-mails.
   (iii) Don't share your personal details with anyone online.

C. 1. Anju should not click on any links or download any attachments until she is sure the email is from a trusted source. Ways how she can identify:

   i. The email address looks suspicious or unfamiliar

   ii. It asks for confidential information like passwords or bank details.

   iii. It includes strange or unknown attachments or links.

2. Rajiv can check the security of a website by looking at the URL in the browser if it starts with https, where the s stands for secure.

Higher Order Thinking Skills (HOTS)

1. Individuals should avoid sharing sensitive personal details. Sharing personal information online can expose individuals to the risk of misuse by cybercriminals. Such misuse can lead to identity theft and other forms of harm.

2. When targeted ads appear based on your conversations or browsing activities, it means that devices or apps are collecting and analysing user data. Implications of such a digital presence:

   i. Loss of Privacy – Even private conversations might be used to tailor ads, raising concerns about digital eavesdropping.

   ii. Behaviour Tracking – Your preferences, habits, and choices are continuously monitored.

   iii. Data Misuse – The collected data can be shared with third parties or used without clear consent.

   iv. Manipulative Advertising – Ads may try to influence decisions by exploiting personal interests or emotions.

Crack The Code

```
                          4                        6
                          T                        C
        1  I N T E R N E T                         Y
                          A                        B
                  2  D I G I T A L F O O T P R I N T
                          E                        B
                          M                        U
               3  H A C K I N G                    L
                          R                        L
        5  H A C K E R                             Y
                                                   I
                                                   N
                                                   G
```

FUN in LAB

Do it yourself.

5. Spreadsheets—An Introduction

A. 1. c.   2. c.   3. d.   4. a.

   5. d.   6. d.   7. b.   8. d.

B. 1. F   2. T   3. F   4. F   5. F

C. 1. Name box   2. Title   3. Quick Access

   4. Formula   5. Worksheet

Let's Do It

A. 1. Excel is the most commonly used interactive spreadsheet program that allows us to perform mathematical calculations, analyse data, and store data in tabular format.

   Formatting Features: Excel allows to use formatting features to improve the look and feel of the data.

   2. Ribbon is like a strip that has various tabs such as Home, Insert, Page, Layout, Formulas and Data. These tabs consist of different groups that contain related commands.

   3. The currently selected cell that appears highlighted with green border is an active cell.

   4. Name box is a box located on the left side of the excel window, just below the Ribbon. The address of the active cell is displayed in this box.

B. 1. Formula bar is a text box located on the right side of the Name box that allows you to enter and edit formulas and perform calculations on your worksheet data. It is also used for entering and editing the contents.

   2. A worksheet is the main working area in excel window where we can enter data, whereas a workbook is a collection of different worksheets.

   3. The row heading is the grey-coloured number (1,2,3...etc) located in front of each row in the worksheet.

   4. To create a new workbook in MS Excel 2016, follow these steps:

   Step 1 Click on File tab to open the Backstage view.

   Step 2 Click on the New option.

   Step 3 Click on Blank workbook in the Available Templates list.

   A new workbook will be created.

C. 1. In a spreadsheet program like Microsoft Excel, data entered into cells can be of various data types, including:

      i. **Numbers:** Numbers include the digits (0–9) and their various combinations. All types of calculations can be done on numbers.

     ii. **Date:** Date type is used to enter the date in different formats.

  2. In a spreadsheet, column headers like A, B, C, D... are part of the spreadsheet's structure, not editable cells.

Higher Order Thinking Skills (HOTS)

a.   S

b.   P, after clicking File tab, select Save As option to save your file.

c.   Double-click

d.   Status bar

Crack The Code

A.   1. D3   2. D5   3. E4

      4. C4   5. B4   6. G4

B.

S	C	H	A	R	T	X	X	M	O
F	O	R	M	U	L	A	P	A	C
U	L	I	J	U	Z	U	R	T	I
N	U	B	N	P	X	T	S	O	M
C	M	B	Q	O	R	O	W	R	A
T	N	O	C	M	U	U	L	C	P
I	F	N	D	K	D	I	G	L	O
O	T	V	Z	C	E	L	L	S	A
N	P	C	Q	A	B	L	O	C	K
W	O	R	K	S	H	E	E	T	T

FUN in LAB

Do it yourself.

6. More on Spreadsheets

A. 1. d.   2. a.   3. a.   4. c.   5. b.   6. a.

B. 1. Insert   2. Cell Styles   3. Select All   4. Merge & Center

C. 1. F   2. T   3. F   4. T   5. T

Let's Do It

A. 1. Yes, we can unmerge the merged cells. The command which is used to unmerge the cells is Unmerge cells command.

  2. Copy command is used to copy the contents to the new location, and it also exists in its original location.

  3. Wrap text feature of MS Excel allows user to display multiple lines of text inside a cell.

B. 1. Steps to wrap the text are:

  Step 1 Select the cell in which you want to wrap the text.

  Step 2 Click on the Wrap Text command in the Alignment group under the Home tab.

  2. Steps to change row height and column width are:

  Step 1 Select the column(s) or row(s) whose width or height you want to change.

  Step 2 Click on the Format command in the Cells group under the Home tab.

  Step 3 Select the Column Width or Row Height under Cell Size section from the drop-down list. A Column width or Row height dialog box will appear.

  Step 4 Type the desired value in the Column Width or Row Height text box.

  3. Steps to apply cell border are:

  Step 1 Select the cell or cell range where you want to add or change a border.

  Step 2 Click on the arrow next to the Borders command in the Font group under the Home tab.

  Step 3 Select the desired border from the drop-down list. Alternatively, you can select the More Borders option to customise the border.

  4. If we type 12*(10+5)-5 in cell A5 and press the Enter key, then the result in cell A5 will be 175.

  When performing calculations using a formula, Excel follows certain rules of precedence:

  • Excel calculates expressions within parentheses '(' , ')' first.

- Excel calculates multiplication and division before addition and subtraction.
- Excel calculates consecutive operators with the same level of precedence from left to right.

For example:

12*(10+5)-5

= 12*15-5

= 180-5

= 175

Here is a justification of the answer:

We multiply 12 by 15, which is 180.

We then subtract 5 from 180, which is 175.

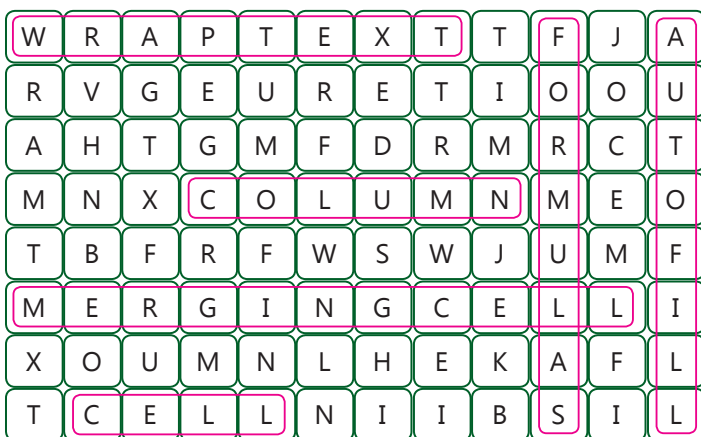Therefore, the result of the expression is 175

C. 1. Sonia should use Wrap Text. Multiple lines of text inside a cell can be displayed using the Wrap Text feature. Wrapping text in a cell does not affect other cells.

2. If Anaya forgot to include marks for a subject, she can easily insert a new column or row in her spreadsheet. To insert a row/column in a worksheet, follow these steps:

Step 1 Select the row/column heading where you want to insert a new row.

Step 2 Click on the Insert command in the Cells group under the Home tab.

Step 3 Select the Insert Sheet Rows/Columns option from the drop-down list.

Higher Order Thinking Skills (HOTS)

1. Click on the row heading to select the entire row.

2. a. To merge cells, follow these steps:

Step 1 Select two or more adjacent cells that you want to merge.

Step 2 Click on the Merge & Center command in the Alignment group under the Home tab. The cells will be merged in a row or column, and the cell content will be centered in the merged cell.

b. Jaspreet (Row 2) → formula in J2: =SUM(E2:I2)

Ahmed (Row 3) → formula in J3: =SUM(E3:I3)

Jasper (Row 4) → formula in J4: =SUM(E4:I4)

Priya (Row 5) → formula in J5: =SUM(E5:I5)

Rajveer (Row 6) → formula in J6: =SUM(E6:I6)

Crack The Code

W	R	A	P	T	E	X	T	T	F	J	A
R	V	G	E	U	R	E	T	I	O	O	U
A	H	T	G	M	F	D	R	M	R	C	T
M	N	X	C	O	L	U	M	N	M	E	O
T	B	F	R	F	W	S	W	J	U	M	F
M	E	R	G	I	N	G	C	E	L	L	I
X	O	U	M	N	L	H	E	K	A	F	L
T	C	E	L	L	N	I	I	B	S	I	L

FUN in LAB

Do it yourself.

Worksheet–1
(Based on chapters 1 to 6)

A.
1. Compact Disc (CD) drive — Digital Versatile Disc (DVD) drive
2. Audio — PS/2
3. Octal — Binary
4. Jerusalem — Cascade
5. Cyberbullying — Plagiarism
6. Title Bar — Ribbon

B.
1. All the physical components of a computer system are called Hardware.
2. The total number of digits used in a number system is called its base or radix.
3. Antivirus software is a program designed to identify, prevent, and remove malware from your computer.
4. Cyber crime can be defined as criminal activities carried out by means of computers or the Internet.
5. A cell range is a collection of two or more cells.
6. AutoFill feature automatically fills a series of data in our worksheet.

C.
1. CPU 2. SMPS 3. Webcam 4. Byte
5. Malware 6. Digital Footprints 7. Title Bar 8. equal (=) sign

D.
1. Projector 2. Graphic Tablet 3. SMPS

Test Sheet–1

(Based on chapters 1 to 6)

Section A

A. 1. a.   2. a.   3. c.   4. b.   5. a.

   6. d.   7. c.   8. d.

B. 1. input devices   2. 8   3. Antivirus

   4. Spam   5. Formula   6. Cell styles

C. 1. F   2. T   3. F   4. T   5. F   6. F

Section B

A. 1. Yes, mouse and keyboard can be wireless.

   2. There are 4 bits in 1 nibble.

   3. The term "eradicating a virus" refers to the process of completely removing a virus from an infected computer, ensuring that the system is clean and secure.

   4. Cyberbullying is the use of electronic media such as smartphones, computers and tablets to harass or attack a person. It is also known as online bullying.

   5. The currently selected cell that appears highlighted with green border is an active cell.

B. 1. Switched Mode Power Supply (SMPS) is a hardware component of the computer used to control the power supply. It is also known as the power supply unit of the computer. It takes the Alternating Current (AC) from a source and converts it into low voltage Direct Current (DC) and then supplies it to other parts of the computer system.

   2. $= 1 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0$

   $= 8 + 4 + 2 + 1$

   $= 15$

   $(1111)_2 = (15)_{10}$

   3. A computer virus is a 'piece of code' or program developed to corrupt the data or program files stored on the computer system. Two types of computer virus are Macro Virus and Boot Sector Virus.

   4. Plagiarism is the act of taking someone else's work and presenting it as your own without giving proper credit to the original author. Two ways to prevent Plagiarism:

   (i) We should always mention the source of information.

   (ii) We should use quotation marks to write the word or lines written by someone else.

   5. A worksheet is the main working area in excel window where we can enter data. A workbook is a collection of different worksheets.

7. Database and DBMS—An Introduction

One Touch Learn

A. 1. b.   2. a.   3. a.   4. c.   5. d.

B. 1. T   2. F   3. F   4. F

C. 1. relation   2. fields   3. primary   4. Status bar   5. Navigation

Let's Do It

A. 1. Primary Key is a unique field by which the records are uniquely identified in a table.

2. The final result of the manipulated data that comes from tables or queries in DBMS is known as a report.

3. A query is the most powerful object of database. It helps us to retrieve information from a table based on some criteria or condition.

4. A form is a database object used to create a user interface to enter or update a record in a table that is connected to it.

B. 1. Steps to add record in Database are:

Step 1 Open the required table in Datasheet view.

Step 2 Place the pointer and start typing where you want to add the new record.

Steps to delete a record in Database are:

Step 1 Open the required table in Datasheet view.

Step 2 Right-click on the row header of the record which you want to delete.

Step 3 Select the Delete Record option from the context menu.

2. Four data types of MS Access are:

1. Short Text   2. Hyperlink   3. Number   4. AutoNumber

C. 1. Advantages of a Database Management system are:

(i) It minimises the duplication of data by integrating and sharing the data files.

(ii) It saves the storage space.

(iii) All the users are provided with some access rights or privileges and permissions.

(iv) The files can be easily updated whenever any changes are made.

2. There are two types of views in MS Access: Datasheet view and Design view. We can switch between these two views by clicking on the arrow of the View command in the Views group under the Home tab.
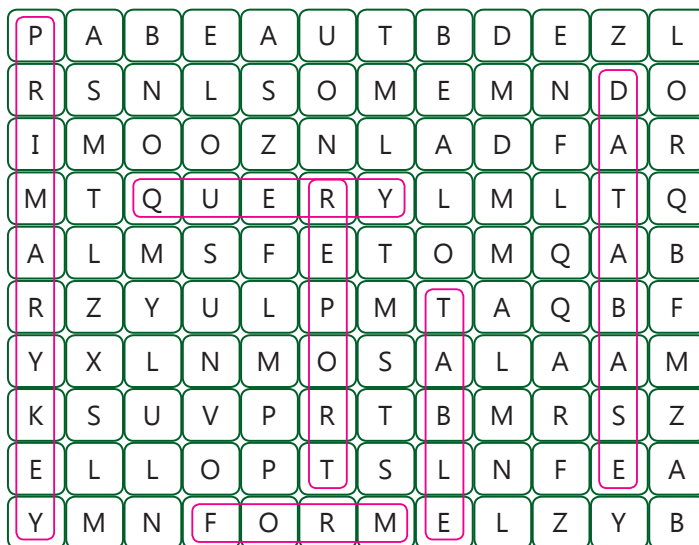
In Datasheet View, by default, Access names the first field ID and sets it as the Primary Key with the AutoNumber data type, which means Access will automatically create a unique number for each record.

In the Design View, the records are not visible. We can only see the field names along with their data types.

3. Following are the rules we should remember while writing field names:
   (i) Field name can be up to 64 characters long.
   (ii) Field name can include any combination of letters, numbers, spaces, and special characters except a period (.), an exclamation mark (!), an accent grave (') and brackets ([ ]).
   (iii) Field name cannot begin with the leading spaces.
   (iv) Field name cannot include a double quotation mark (").

D. 1 Ranjeet can use the Sort feature in Microsoft Access to view records in a sequential manner. The Sort feature allows users to arrange data in ascending (A-Z or 0-9) or descending (Z-A or 9-0) order based on the values in one or more fields.

2. Jennifer is most likely to use a Relational Database to track her monthly expenses. A relational database allows data to be organised in tables with rows and columns, making it easier to store, retrieve, and manage data efficiently.

Higher Order Thinking Skills (HOTS)

1. To retrieve information about students who scored above 90%, the Query object in Microsoft Access should be used. It helps in retrieving information from a table based on some criteria or conditions.

2. In Microsoft Access 2016, the student information should be typed directly into the Datasheet View of the table.

Crack The Code

P	A	B	E	A	U	T	B	D	E	Z	L
R	S	N	L	S	O	M	E	M	N	D	O
I	M	O	O	Z	N	L	A	D	F	A	R
M	T	Q	U	E	R	Y	L	M	L	T	Q
A	L	M	S	F	E	T	O	M	Q	A	B
R	Z	Y	U	L	P	M	T	A	Q	B	F
Y	X	L	N	M	O	S	A	L	A	A	M
K	S	U	V	P	R	T	B	M	R	S	Z
E	L	L	O	P	T	S	L	N	F	E	A
Y	M	N	F	O	R	M	E	L	Z	Y	B

8. More on Access

One Touch Learn

A. 1. a.   2. b.   3. c.   4. c.

B. 1. F   2. F   3. T   4. T   5. T

C. 1. Title, logo   2. Layout view   3. Relationship   4. Run   5. Foreign key
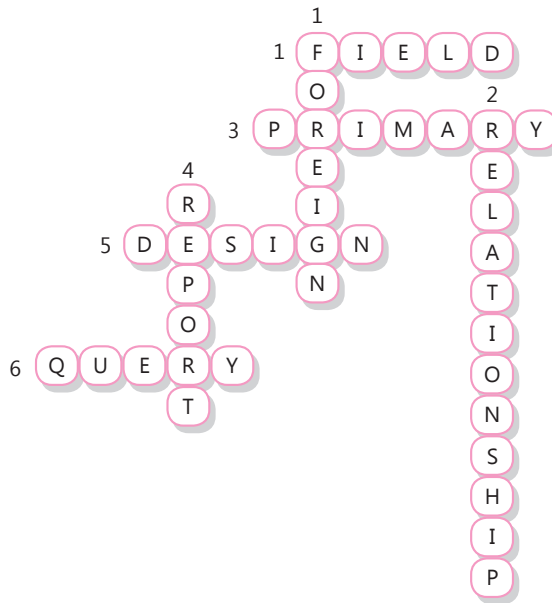
Let's Do It

A. 1. A form is a database object used to add, edit and display data from a table in a user-friendly manner.

2. A report is used to organise and present data in a user-friendly format so that it can be printed.

3. The three main views in which a form can be displayed are: Form view, Design view and Layout view.

B. 1. A query is one of the most important tools. It helps to find, filter, and analyse data from the database. Whereas a report in MS Access is a feature which allows us to organise and present our data in a user-friendly format so that it can be printed.

2. To create a report, follow these steps:

Step 1   Open the desired table for which you want to create a report.

Step 2   Click on the Report command from Reports group under Create tab.

The report of the table, which is open will be created.

3. Field, table, sort and criteria are the parameters displayed at the bottom of the Query window while creating a query.

C. 1. Neil should use the Design tab in Microsoft Access to add a logo and title to the registration form. Under the Header/Footer group of the Design tab, he can find the commands.

2. In the 'Orders' table, the corresponding field should also be named 'CustomerID', but it should be defined as a foreign key.

This is because the primary key (CustomerID) in the 'Customers' table uniquely identifies each customer, and by placing the same field in the 'Orders' table as a foreign key.

Higher Order Thinking Skills (HOTS)

1. The default view in which a form appears when it is first created in Microsoft Access is the Layout View.

2. The type of form used for viewing multiple book records at once is called a Multiple Items Form.

Crack The Code

Across:
1. FIELD
3. PRIMARY
5. DESIGN
6. QUERY

Down:
1. FOREIGN
2. RELATIONSHIP
4. REPORT

FUN in LAB

Do it yourself.

9. Lists and Tables in HTML

One Touch Learn

A.	1. a.	2. c.	3. c.	4. c.	5. b.
B.	1. T	2. F	3. F	4. F	5. T
C.	1. TYPE, START		2. disc	3. <TH>	
	4. border-style		5. Table Data		

A. 1. The <UL> tag is used to define an unordered list with any of the bullets using the TYPE attribute or list-style-type property.

2. <OL TYPE="a">

B. 1. The border-spacing property is used to specify the space between the borders of adjacent cells. For example:

```
<style>
table, th, td
{
border:2px;
border-style:solid;
border-color:green;
border-spacing:15px;
}
</style>
```

2.
```
table {
border: 3px solid red;
  border-spacing: 10px;
  padding: 15px;
}
```

3. The ROWSPAN attribute in HTML is used with the <td> or <th> tag inside a table. The ROWSPAN attribute applies when a cell is extended for more than one row, that is, the cell spans for 2 or more rows instead of 1. Example:

```
<table border="1">
  <tr>
    <th>Name</th>
    <th rowspan="2">Class</th>
    <th>Subject</th>
  </tr>
  <tr>
    <td>Ravi</td>
    <td>Science</td>
  </tr>
</table>
```

C. 1. Nisha should use the rowspan attribute.

2. Rakesh should use the background-color property.

Higher Order Thinking Skills (HOTS)

1.  ```
    <HTML>
    <HEAD>
       <TITLE> Key Features of HTML </TITLE>
    </HEAD>
    <BODY>
       <B>Key Features of HTML</B><BR>
    ```
    Some of the important features of HTML are:
    ```
       <UL>
          <LI>It is a platform-independent language.</LI>
          <LI>It allows us to build tables.</LI>
          <LI>It allows us to add a link to the web page.</LI>
          <LI>It is not a case-sensitive language.</LI>
          <LI>It is a very easy and simple language.</LI>
          <LI>It provides a flexible way to design web pages along with the
          text.</LI>
       </UL>
    </BODY>
    </HTML>
    ```

2. Do it yourself.

Crack The Code

1. Ordered List   2. <DL>   3. <TR>

4. width   5. padding

FUN in LAB

Do it yourself.

10. More on Html

A. 1. c.   2. c.   3. c.   4. a.

     5. c.   6. b.

B. 1. F   2. T   3. F   4. T   5. F

C. 1. Password   2. Method   3. type

     4. Reset   5. select, option

Let's Do It

A. 1. Alt specifies the alternate text to be displayed in the web browser, if the provided image is not found.

2.
```
<!DOCTYPE HTML>
<HTML>
<HEAD>
<TITLE>Audio</TITLE>
</HEAD>
<BODY>
<AUDIO SRC="TalkNext.mp3" CONTROLS AUTOPLAY>
</AUDIO>
</BODY>
</HTML>
```

3. **RADIO:** This value is used to create a radio button control. A radio button control is used to select only one option from a set of options.

   CHECKBOX: This value is used to create a checkbox control. A checkbox control allows us to select multiple options from a set of options.

4. Five different values that can be assigned to the TYPE attribute of the <INPUT> tag in HTML are: TEXT, RADIO, CHECKBOX, RESET, PASSWORD.

B. 1. The control attribute allows users to gain control over how the video is played.

2. To open a link in a new browser window or tab using HTML, you use the target="_blank" attribute in the Anchor tag.

   WIDTH specifies the width of the image in the web page. For example,
```
<IMG SRC="lily.jpg" WIDTH="50 %">
```

3. HTML provides a feature to display more than one web page on a single screen of the web browser. These web pages are actually displayed using frames. Frames are the different sections or parts of a web page.

4. A checkbox is like a toggle switch where users can select a desired choice by clicking on the check box. You can assign different values to checkboxes using the value attribute.

```
<form>
  <input type="checkbox" name="subject" value="Math"> Math<br>
  <input type="checkbox" name="subject" value="Science"> Science<br>
  <input type="checkbox" name="subject" value="English"> English<br>
</form>
```

C. 1. You can use internal links (<a href="#section">) to navigate within a course, and external links (<a href="https://example.com" target="_blank">) to connect to outside resources.

2. Use the <iframe> tag to display two web pages side by side. One page can include a list and radio buttons, while the other can show checkboxes. This allows users to view and interact with both pages on a single screen.

Web Page 1 – Using a List with Radio Buttons:

```
<!DOCTYPE html>
<html>
<head>
  <title>Course Options - Radio Buttons</title>
</head>
<body>
  <h1>Select Your Preferred Course Type</h1>
  <ol>
    <li>
     <input type="radio" name="course" value="online" id="online">
      <label for="online">Online Course</label>
    </li>
    <li>
     <input type="radio" name="course" value="offline" id="offline">
      <label for="offline">Offline Course</label>
    </li>
    <li>
     <input type="radio" name="course" value="hybrid" id="hybrid">
      <label for="hybrid">Hybrid Course</label>
```

```
      </li>
    </ol>
  </body>
</html>
```

Web Page 2 – Using a List with Checkboxes:

```
<!DOCTYPE html>
<html>
<head>
  <title>Resources - Checkboxes</title>
</head>
<body>
  <h1>Select the Resources You Need</h1>
  <ul>
    <li>
      <input type="checkbox" name="resources" value="ebooks"
      id="ebooks">
      <label for="ebooks">E-books</label>
    </li>
    <li>
      <input type="checkbox" name="resources" value="tutorials"
      id="tutorials">
      <label for="tutorials">Tutorials</label>
    </li>
    <li>
      <input type="checkbox" name="resources" value="webinars"
      id="webinars">
      <label for="webinars">Webinars</label>
    </li>
  </ul>
</body>
</html>
```

Higher Order Thinking Skills (HOTS)

```
<!DOCTYPE html>
<html>
```

```
<head>
  <title>NEWS</title>
</head>
<body>
  <h1>School News Bulletin</h1>
  <marquee direction="right">
    * Dance competition will be held on Monday.
  </marquee>
  <marquee direction="right">
   * You have to submit your entries for the school magazine by Friday.
  </marquee>
</body>
</html>
```

Crack The Code

1. Yes, in HTML5, you can embed a video that plays with its audio muted by default. This is achieved using the <video> element with the muted attribute.

2.
```
<!DOCTYPE html>
<html>
<head>
  <title>Harmful Effects of Plastics</title>
</head>
<body>
  <h2>Select Harmful Effects of Plastics:</h2>
  <form>
   <input type="radio" name="effect" value="Pollution"> Pollution<br>
    <input type="radio" name="effect" value="Pleasant Weather">
    Pleasant Weather<br>
    <input type="radio" name="effect" value="Endangering Wildlife">
    Endangering Wildlife<br>
   <input type="radio" name="effect" value="Toxicity"> Toxicity<br>
   <input type="radio" name="effect" value="Greenery"> Greenery<br>
  </form>
</body>
</html>
```

3. Yes, the HTML code will still execute without error, even if the image file image.jpg is missing or deleted.

The image will not be displayed on the web page because the file image.jpg is not found.

Instead, the browser will show the alternate text provided by the alt attribute.

FUN in **LAB**

Do it yourself.

Worksheet–2

(Based on chapters 7 to 10)

A.
1. The software required to store, retrieve, and manage data in a database is known as a Database Management System (DBMS).
2. Datasheet view is the default view of the table. It shows all the fields and the records as entered by the user.
3. Query allows user to retrieve information from a table based on some criteria or condition.
4. A form is a database object used to create a user interface to enter or update a record in a table that is connected to it.
5. This type of list is used to display the items in a sequential manner. <OL> tag is used to create an ordered list.
6. Internal linking connect one page of a website to another page on the same site.

B.
1. Microsoft Access — ORACLE
2. Title Bar — Ribbon
3. Short Text — Hyperlink
4. Select — Parameter
5. Type — Start
6. Behaviour — Direction

C.
1. Field Properties Pane
2. Design
3. Date and Time
4. Report
5. Ordered List
6. <TR>
7. BGCOLOR
8. ALINK

9. TYPE

10. <TEXTAREA>

D. 1. <INPUT TYPE="RADIO">

2. <INPUT TYPE="BUTTON">

3. <SELECT>

Test Sheet–2
(Based on chapters 7 to 10)

Section A

A.	1. a.		2. c.		3. b.		4. a.		5. c.		6. c.

B. 1. List   2. Relationship   3. Run   4. Ordered list

5. <A>   6. <SELECT>

C. 1. F   2. T   3. T   4. F   5. F   6. T

Section B

A. 1. Primary key is a unique field by which the records are uniquely identified in a table.

2. Yes, we can add an image as background in a form of MS Access. Format tab is used to add an image in a form of Access.

3. <CAPTION> tag is used for defining the title of the table.

4. BORDER specifies the thickness of the border surrounding the image.

B. 1. Advantages of Database system are:

(i) It minimises the duplication of data by integrating and sharing the data files.

(ii) It saves the storage space.

(iii) All the users are provided with some access rights or privileges and permissions.

(iv) The file can be easily updated whenever any changes are being made.

2. A form is a database object used to create, edit and display data stored in tables in a user-friendly manner. Three main views in which a form can be displayed are:

(i) Form View

(ii) Design View

(iii) Layout View

3.
```
<html>
<head>
</head>
<body>
```

```
<table border="1">
<tr>
<th rowspan="2"> Name</th>
<th rowspan="2"> Subject</th>
<th colspan="2"> Marks</th>
</tr>
<tr>
<th>Term 1</th>
<th>Term 2</th>
</tr>
<tr>
<td>Chirag</td>
<td>English</td>
<td>79</td>
<td>87</td>
</tr>
<tr>
<td>Divya</td>
<td>Math</td>
<td>88</td>
<td>83</td>
</tr>
</table>
</body>
</html>
```