Chapter 1

A. Fill in the blanks:

1. 2   2. Decimal   3. 8
4. 10   5. Binary   6. Hexadecimal
7. 0

B. True or False:

1. False   2. True   3. True
4. True   5. False   6. False

C. Application based questions:

1. She should divide the decimal number by 2 and must use quotient and remainder method for the same.
2. He should remember that the number is borrowed when 1 is subtracted from zero.

D. Tick mark:

1. Aryabhatt   2. Digital Computer
3. Binary   4. 1   5. 2

E. Answer the following:

1. A method of writing or expressing numbers of a given set using digits or either symbols is called the Number System. The most commonly used Number System are:
   (a) Decimal Number System
   (b) Octal Number System
   (c) Binary Number System
   (d) Hexadecimal Number System

2. The rules to convert a decimal number into binary number are as follows:
   (a) Divide the given decimal number with the base 2.
   (b) Write down the remainder and divide the quotient again by 2.
   (c) Repeat step 2 till the quotient is zero.
   (d) Write the remainders obtained in each step in the reverse order to form the binary equivalent.

3. The rules for performing multiplication on binary numbers are same as that of the decimal numbers. For example,

x	y	x*y
0	0	0
0	1	0

| 1 | 0 | 0 |
| 1 | 1 | 1 |

4. The Octal Number System consists of 8 digits i.e., 0 to 7, with the base 8. The concept of Octal number system came from the Native Americans as they used to count numbers by using the space between their fingers.

5. Hexadecimal number system, also known as Hex, consists of 16 digits i.e., numbers 0-9 and the letters A-F, where A-F represent decimal numbers from 10 to 15.

Chapter 2

A. Fill in the blanks:

1. Calculations   2. Cell Reference

3. Absolute Reference   4. Arguments

5. &

B. True or False:

1. False   2. False   3. False   4. True

C. Application based questions:

1. She should use Max() to find the maximum height and Min() function to find the minimum height respectively.

2. She should calculate salary by using the formula 15,000+ 0.01*15,000

D. Tick mark:

1. Sheet1!D4   2. Alt+=   3. MAX()

4. A3   5. COUNT()

E. Answer the following:

1. Formulas are the user defined instructions to perform mathematical calculations on the data. In Excel, a formula must begin with an equal to symbol followed by cell references and operators. For example,
=SUM(A3+B3), =SUM(A1:A10)

2. The cell address that we use in the formula is known as the Cell Reference. The three types of cell references are:
(a) Relative Reference
(b) Absolute Reference
(c) Mixed Reference

3. Absolute reference is used when we do not want to change the address of the cell while copying the formula to another cell. A dollar sign must be placed before the row number and column

number in absolute reference. For example, C3*D3, where C3 is relative reference and D3 is absolute reference.

4. The addition of two or more text values is called Concatenation. For example, Suppose we want to combine the text in column A and column B to create a combined name in a new column C, in such a case, we can write formula =A&B.

5. Functions are the predefined or built-in formulas in Excel used to perform various kinds of operation quickly. Some of the most commonly used functions are Autosum(), Average(), Max( ), Min() etc.

6. A range is a group of contiguous cells which forms the shape of a rectangle. It is mainly used to create a graph or charts.

Chapter 3

A. Fill in the blanks:
1. Chart
2. Data Values
3. Rectangular
4. Y-axis
5. Legend

B. True or False:
1. False   2. True   3. False   4. True   5. False

C. Application based questions:
1. She will use Advanced filters for the same.
2. She will use a Bar chart because it is good to make comparisons between the individual data items.

D. Tick mark:
1. Data Series
2. Pie
3. F11
4. Datasheet
5. Sort

E. Answer the following:
1. A pictorial representation of numeric data is called a Chart.
2. Column Chart is used for displaying data that shows different trends over a period of time whereas bar chart is mostly used to make comparisons between individual data items.
3. Chart Area includes the chart and the entire element related to a chart whereas Plot area includes the actual chart itself and contains plotted data, data series, category and value axis.
4. Sorting feature is used to arrange the data in ascending or descending order.
5. The FILTER function allows us to easily extract matching records from a larger set of source data based on criteria which is entered by us.

Chapter 4

A. Fill in the blanks:

1. Syntax
2. Guido Van Rossum
3. Edit
4. Line by Line
5. Variable
6. Keyword

B. True or False:

1. True
2. True
3. True
4. False
5. True
6. True
7. True

C. Application based questions:

1. He should use \t separator with the print() function.
2. She can use Script mode for the same.

D. Tick mark:

1. Numbers
2. Overwritten
3. Assignment
4. Float
5. \t
6. Script Area
7. 1020

E. Answer the following:

1. The four important features of Python programming language are:
   (a) Simple Syntax
   (b) Easy to Learn
   (c) Case-Sensitive language
   (d) An interpreted Language

2. A variable is a named memory location that stores the data and whose value may change during program execution. The certain rules to write a variable in Python are:
   (a) A variable name must start with the alphabet.
   (b) A variable name can consist of alphabets, digits and underscore.
   (c) Python keyword cannot be used as a variable name.

3. The different working modes to write a program in Python programming language are:
   (a) Interactive mode: In this mode, instructions are executed line by line giving the output.In simple words, we can say that this mode is suitable for small programs.
   (b) Script mode: Script mode is used for writing lengthy programs. In this mode, we can save programs in the form of files.

4. Data type is a kind of classification that tells the computer what type of values a variable can hold. The two basic data types used in Python are:
   (a) int(Integer): This data type represents integral numbers.

The three types of integer in Python are int, long int and bool.

(b) String: A string data type represents strings of characters enclosed within quotation marks. For example, 'Hello'

5. Print() function is used to print a specified message string or any other object to the screen. It is also used to display the output of any instruction given by the user. The three types of separator used with print() function are:

(a) Comma operator: Used to provide space between the values.

(b) Tab space(\t): Used to give tab space between the values.

(c) Newline Character(\n) Used to end a line and start a new line.

6. Interpreter converts the command into machine language. After processing, the interpreter again converts the machine code into human readable form. It is different from a compiler in terms of translating programs. Interpreter translates just one statement of the program at a time into machine code whereas Compiler scans the entire program and translates the whole of it into machine code at once.

Chapter 5

A. **Fill in the blanks:**
   1. Precedence   2. Expression   3. +
   4. NOT   5. Comparison

B. **True or False:**
   1. False   2. False   3. True   4. True   5. False

C. **Application based questions:**
   1. He should use the modulus operator for the same.
   2. She would write the following lines of code:
      a=a+b
      b=a-b
      a=a-b

D. **Tick mark:**
   1. Operands   2. False   3. Assignment
   4. Floor division

E. **Answer the following:**
   1. Operators are symbols that perform arithmetic and logical operations on operands and provide meaningful results.
   2. Division operator is used to divide the number and produce an output in the decimal form whereas Floor Division operator is

used to divide the number and produce an output in the integer form.

3. '*' operator is used to replicate a given string for a specified number of times. It is also known as a Replication operator.

4. (a) String Operators: String operators are used to perform two kinds of operations on string data types. The two types of string operators in

   Python are: Concatenation Operator and Replication Operator.

   (b) Logical Operators: Logical Operators are used to control the flow of program execution. These operators are also known as Boolean Operators. In programming, three types of logical operators are commonly used. These are AND, OR and NOT.

5. Those statements that are added to a program with the purpose of making the code easier to understand are called Comments. The two types of comments in Python are Single Line Comments and Multiline Comments.

Worksheet 1

A. Fill in the blanks:

1. 16   2. Absolute, Relative 3. Ctrl+C

4. Record   5. Pie

B. True or False:

1. False   2. True   3. False   4. True   5. False

C. Tick mark:

1. 2   2. .xlsx   3. =

4. Category   5. Data Series

D. Answer in one word or a sentence:

1. Assignment Operator

2. Formulas tab

3. Arguments are separated by comma within the parenthesis.

E. Answer the following:

1. The Octal Number System consists of 8 digits i.e., 0 to 7, with the base 8. The concept of Octal number system came from the Native Americans as they used to count numbers by using the space between their fingers.

2. Bar Chart, Column Chart, Line Chart, Pie Chart, Scatter Chart are some of the commonly used charts in MS Excel.

Chapter 6

A. Fill in the blanks:

1. Text-align   2. Line-height   3. Font-style

4. Text-transform   5. Inline   6. Margin

B. True or False:

1. False   2. True   3. False   4. False

5. False   6. True

C. Application based questions:

1. She must have used Text Transform for the same.
2. She must have used Text Shadow property.
3. He can write the following lines of code in the HTML file:

```
<STYLE TYPE= "TEXT/CSS">
P{COLOR:GREEN}
</STYLE>
```

D. Tick mark:

1. 3x   2. Border-style:inset   3. Line-Height

4. Text-Decoration   5. Text-Decoration   6. Serif

7. Word-Break   8. 16px

E. Answer the following:

1. Text Decoration property is used to specify the decorations that can be applied to the text in a block whereas Text Shadow property is used to add shadow around the text.
2. Font family property is used to specify the prioritised list of fonts to be used to display a given element or a webpage.
3. We can set the margin in an HTML document using the Margin properties.
4. The various values that can be assigned to font size property are xx-large, smaller, x-large, x-smaller, large, xx-smaller, percent etc.
5. In the Inline style method, style declaration is given with each individual element with the help of style attribute.
6. Border properties help us to set the border style, border colour and border width in an HTML document.We should always declare the border-style property before the border-width and border-color property.
7. **(a) Text-Indent:** The text-indent property specifies the indentation of the first line of a text.

   (b) Word Break: The word break property specifies the line breaking rules.

(c) **Text-Transform:** This property is used to transform the letters in a text into uppercase, lowercase or capitalise the first letter of each word.

(d) Line-Height: This property is used to specify the space between two lines of the text.

Chapter 7

A. **Fill in the blanks:**

1. List	2. Unordered	3. Border-spacing
4. Reversed	5. Description	

B. **True or False:**

1. False	2. False	3. False
4. True	5. False	

C. **Application based questions:**

1. He should use Border-collapse property.

2. She would use List-Style-Image property for the same.

D. **Tick mark:**

1. Bulleted	2. 1	3. List-style-position
4. <dd>	5. Caption-side	

E. **Answer the following:**

1. <UL> tag is used to indent each item in the list and adds a bullet against each of them whereas the <OL> tag is used in situations where order of the item is significant or where it is required to keep a count of the number of items.

2. The different types of list supported by HTML5 are:

   (a) Unordered List: An unordered list is used when the items are not to be displayed in any particular sequence. The unordered list is also known as Bulleted list.

   (b) Ordered List: The ordered list is used to display the list of items in a specific order. An ordered list is also known as Numbered List.

   (c) Description List: Description list is used to present a glossary, list of terms or other name/value lists. It starts and ends with <dl> and </dl> tags.

3. Tables are an effective way of presenting information in the form of rows and columns. To create a table in HTML, <table> tag is used.

   Each table begins with a <table> tag and ends with </table> tag.

4. **(a) List-style-image:** This property is used to specify an image as the list item marker.

    (b) List-style: This is the shorthand property wherein all the list properties can be specified in one declaration.

    (c) Empty Cells: This property helps in specifying whether or not the border and background are to be placed around empty cells in a table.

Chapter 8

A. Fill in the blanks:
1. Computer Ethics   2. Citation   3. Cyber Bullying
4. Hacking   5. Intellectual Property

B. True or False:
1. True   2. False   3. False   4. True   5. True

C. Application based questions:
1. She should check To: and CC: fields of email because messages that do not include your email address in To: or CC: are common forms of spam.
2. She should identify the secured websites by looking at the lock sign or https on the address bar.

D. Tick mark:
1. Spams   2. Cookie   3. Copyright
4. Encryption   5. Phishing

E. Answer the following:
1. The main advantages of Internet are:
   (a) Education: The Internet has changed the traditional learning system.It is widely used for educational purposes.
   (b) Convenient mode of Communication: The Internet provides a convenient and economical mode of communication.
   (c) Business: The Internet has brought new opportunities for businesses to sell goods and services online.
2. The four ethical guidelines which should be followed while using a computer are:
   (a) Do not use computer technology to steal information or to cause disruption or interference in other users' work.
   (b) Avoid buying pirated software. Pay for the software unless it is free.
   (c) Do not use someone else's computer resources without an authorization.
   (d) Do not spy on another person's computer data.
3. Plagiarism is the usage of language and thoughts of another person and projected as one's own original work. The simplest way to prevent plagiarism is Citation.

4. We can protect our Intellectual Property Rights from getting violated using the following preventive measures:
   (a) Patent our inventions,
   (b) Copyright our Art and Publications,
   (c) Register our Trademarks.
5. (a) Plagiarism is the usage or imitation of the language or thoughts of another person and projected as one's own original work.
   (b) Firewall is a security system that prevents unauthorised people from accessing our system and network.
   (c) A cyberterrorism or cybercrime is any illegal activity done through the Internet, e.g.,Identity theft where somebody can steal your email id or password and use it to send fake emails containing false information about a product.
   (d) Hacking refers to an activity of illegal intrusion into a computer system or a network.
   (e) Phishing is an act of sending an email to a user, misleading him to believe that it is from a trusted person or organisation in an attempt to obtain sensitive information for malicious purposes.

Chapter 9

A. **Fill in the blanks:**
   1. Social networking 2. Cyberbullying 3. Blogger
   4. Confidentiality, Privacy
B. **Application based questions:**
   1. Flipkart and Amazon are the two reliable websites.
   2. A videoconferencing is a live, visual conversation between two or more people living in separate locations.
C. **Classify the name of the given websites:**
   (a) 123greetings   (b) Flipkart
   (c) Facebook   (d) Skype
   (e) IRCTC   (f) Google Drive
D. **Tick mark:**
   1. Tumblr   2. Google Hangouts
E. **Answer in one word or a sentence:**
   1. Blogging   2. E-commerce 3. Online Reservation
F. **Answer the following:**
   1. Internet plays an important role in the Education sector. Now-a-days, students can attend virtual classes conducted by Schools and can download the study material at their homes.

In the field of shopping, internet is a convenient method using which we can buy or sell anything from our homes in just a few minutes.

2. The two disadvantages of Social networking websites are:
   (a) Fake Identities: Many people create fake identities to exploit and abuse others.
   (b) Confidentiality and Privacy: Confidentiality and Privacy are very big issues because people post personal information online.

3. The various modes of online payment are:
   (a) Credit Card
   (b) Debit Card
   (c) E-money
   (d) Netbanking
   (e) Payment Service Provider

4. Social networking is a facility that allows us to make connections with friends, family, classmates, customers and clients. A social network website brings people together to talk, share ideas or make new friends.

5. Blogging is a technical term used for writing a blog whereas Podcasting is a method of using the Internet to create audio or video clips and make them available for download.

Chapter 10

A. **Fill in the blanks:**
   1. Artificial Intelligence
   2. Google
   3. IBM Watson
   4. Electronic Virtual Assistant
   5. Biometric
   6. Artificial Narrow Intelligence

B. **True or False:**
   1. False
   2. False
   3. True
   4. True
   5. False

C. **Application based questions:**
   1. ANI refers to the ability of computers to perform a single task effectively whereas AGI refers to the ability of systems to perform any intellectual task with efficiency like a human and ASI is theoretically possible only as it is an outcome of AGI.
   2. Amazon Echo is a smart device consisting of far-field microphones that can pick out Rohit's voice through background noise and are waiting to take his command when they hear the Echo wake word. Once he says this, Echo will swing into action and respond to his commands.

D. Match the following:

S.No.	Column A	Column B
1	Amazon's Alexa	Smart Virtual Assistant
2	Google Maps	Navigation Apps
3	Voice Based Search Engines	Speech Recognition
4	Google Translator	Natural Language Processing

E. Tick mark:

1. ANI   2. Machine Learning 3. Deep Learning

4. Google Translator 5. Flipkart

F. Answer the following:

1. Artificial Intelligence is the ability of machines to perform cognitive tasks like thinking, perceiving, learning, problem solving and decision-making.

2. (a)

S.No.	ANI	AGI
1.	ANI is the ability of computers to perform a single task effectively and efficiently.	AGI can be defined as the ability of systems to perform any intellectual task with efficiency like a human.
2.	These systems are intelligent enough to perform a single task very well.	These systems are hard to develop.

(b)

S.No.	Machine Learning	Deep Learning
1.	Machine Learning is a form of AI that enables systems to learn automatically from experience or past information.	Deep learning, a machine learning technique, is capable of learning by example.
2.	Auto Complete Suggestion feature is an example of Machine learning technique.	Self driving cars are one of the great examples of deep learning technique.

3. Natural Language Processing refers to the AI method of communication with an intelligent system using naturally written or spoken languages. We should always remember that the input and output data of an NLP system can be either speech or written text.
4. The three important perspectives of AI technology are:
   (a) Healthcare Perspective: In the healthcare industry, the main goal of implementing AI machines is to enhance productivity in terms of improvement in patient care and reducing work pressure.
   (b) Banking Perspective: In the banking sector, AI machines are used to collect personal data and provide financial advice as per the requirement of customers.
   (c) Social Networking Perspective: In social networking websites, AI technology is widely used for face recognition.
5. **(a) Biometric System:** Biometric System is an artificial intelligence application that collects data on facial and demographic characteristics.
   (b) EVA: EVA, an acronym of Electronic Virtual Assistant is India's first and largest artificial intelligence banking chatbot. This chatbot uses Natural Language Processing technique to understand the user query and fetch the relevant information from a larger database within a second.
   (c) Self-driving car: A self-driving car, also known as an autonomous vehicle, driverless car, or robo-car, is a vehicle that is capable of sensing its environment and moving safely with little or no human input.

Worksheet 2

A. Fill in the blanks:

1. Sequential	2. List	3. Keylogger
4. String	5. Relational	6. Assignment
7. Padding	8. Software Piracy	9. Internet
10. Deep Neural Learning		

B. True or False:

1. False	2. True	3. True	4. True	5. False
6. False	7. True	8. True	9. False	10. True

C. Tick mark:

1. Encryption	2. List-Style-Image	3. =
4. <Table>	5. Bots	

D. Answer in one word or a sentence:
1. Replication Operator
2. Conditional statements
3. Text-Transform
4. Line-Height
5. Cyber Ethics

E. Answer the following:
1. Plagiarism is the usage of language and thoughts of another person and projected as one's own original work. The simplest way to prevent plagiarism is Citation.
2. Remainder operator(%) is used to find the remainder when one value is divided by the other number.
3. Input() function is used to accept the value for a variable from the user.
4. Control statements in Python are used to control the flow of program execution.
5. We can set desired margins in an HTML document using the Margin properties.