Class 7

# **ANSWER KEY**

#### Thinkcode Ver 2.0

## 1. Number System



#### Exercise

**A.** 1. b

2. a

3. b

4. a

**B.** 1.0

2. 2

3. decimal number

4.10

6. Binary

5.8

- **C.** 1. Octal number system is used as a shorthand representation of long binary numbers.
  - 2.4 Bits = 1 nibble.
  - 3. The total number of digits used in a number system is called its base.
- **D.** 1. A number system is simply a method of counting. There are 4 types of number systems in computer such as binary number system, decimal number system, octal number system, and hexadecimal number system.
  - 2. 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:** List the last quotient and all the remainders (moving from bottom to top). You have your binary number.
  - 3. Rules to subtract two binary number:

Х	Υ	Х–Ү
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

**E.** 1. 
$$(10111.011)_2 = 1 \times 2^4 + 0 \times 2^3 + 1 \times 2^2 + 1 \times 2^1 + 1 \times 2^0 + 0 \times 2^{-1} + 1 \times 2^{-2} + 1 \times 2^{-3}$$
  
=  $1 \times 16 + 0 + 1 \times 4 + 1 \times 2 + 1 \times 1 + 0 + 1/4 + 1/8$ 

$$= 16 + 4 + 2 + 1 + 0.25 + 0.125$$

 $= (23.375)_{10}$ 

2.		0	10	10			10	Borrow
		1	0	0	1	1	0	
	_			1	1	0	1	
			1	1	0	0	1	

3.	(a)		1	0	0	0
		+		1	0	1
			1	1	0	1

# Activity Zone

Carry

Carry

### 2. Charts in Excel 2016



A.	1. b	2. b	3. b	4. b	5. c
B.	1. F	2. F	3. T	4. T	5. F
C.	1. Chart	2. Gridlines	3. Legend	4. Column	5. Pie

- **D.** 1. A chart is an effective way to display data in a pictorial form. It makes it easier to draw comparison and analyse the growth, relationship and trends among the values in a table.
  - 2. Legend is a key which shows the meanings of symbols and colours used in the chart.
  - 3. Bar chart displays the data in the form of long rectangular rods, also called bars.
  - 4. Area chart is used to display the quantitative magnitude of the data graphically.
- **E.** 1. Line Chart: It is used to show trends over a period of time. It is similar to plotting a graph on a graph paper with its values on X and Y axis. It uses connecting dots to display trends of a data over a given period of time. Whereas Scatter charts are also known as XY scatter plot charts. They show the correlation between the two sets of values. The x and y axes are used to represent the data plots on the chart.
  - 2. The five components of charts are as follows:

**Data Series:** It is related to the set of values. It is represented by the bars or slices that represent the data values.

**Data Labels:** It includes data values, category name, series name, legend keys and values from cells.

**Gridlines:** These can be either horizontal or vertical lines depending on the selected chart type. It makes it easier to read and understand the values.

**Legend:** It is a key which shows the meanings of symbols and colours used in the chart.

Chart Area: It includes all the objects and elements of a chart.

- 3. Follow these steps to change the chart type:
  - **Step 1:** Select the chart.
  - Step 2: Click on the Change Chart Type command from Type group under the Design tab.
  - **Step 3:** Click on Line from the left panel of the Change Chart Type dialog box.
  - **Step 4:** Click on Line with Markers option from the right panel under Line group.

The chart will change to Line Chart.

**F.** Pie chart



### 3. Advanced Features of Excel



#### Exercise

**A.** 1. a

2. b

3. b

4. b

5. b

**B.** 1. F

2. F

3. F

4. T

5. F

- **C.** 1. Sorting data means to organise the data in ascending or descending order.
  - 2. To remove filters, click on the filter command in the Data tab.
  - 3. Filter command is used to hide unimportant data.
- **D.** 1. Sorting data refers to the process of organizing data in ascending or descending order. Whereas, filtering data refers to remove or hide the unimportant data to emphasise on the important information.
  - 2. Conditional formatting can be applied on the following criteria:

i. Highlight Cells Rules

ii. Top/Bottom Rules

iii. Data bars

iv. Color Scales

v. Icon sets

- 3. To use Custom Sorting, follow these steps:
  - **Step 1:** Select the range of columns to be sorted.
  - **Step 2:** Click on the Sort & Filter command from the Editing group under Home tab. A dropdown list appears.



Step 3: Click on the Custom Sort option from the drop-down list.

The Sort dialog box opens.

- **Step 4:** Check My data has headers checkbox, if the selected columns have a heading at the top.
- **Step 5:** Click on the Sort by box and select the column header according to which you want to sort the data. In this case, we have selected Client Name header.
- **Step 6:** Click on the Sort On box and select Cell Values option.
- **Step 7:** Click on the Order box and select the A to Z or Z to A option. In This case, we have selected A to Z option.
- **Step 8:** Click on the Add Level button at the top of the Sort dialog box to add another column to sort. In this case, we have added Amount Billed column.
- Step 9: Click on the OK button.
- 4. To apply conditional formatting to a series of data, follow these steps:
  - **Step 1:** Select the data to which formatting is to be applied.
  - **Step 2:** Click on the Conditional Formatting command from Styles group under Home tab.

A drop-down list appears. This list shows various criteria.

- **Step 3:** Select the desired conditional formatting. In this case, we have selected the Orange Data Bar option under the Data Bars category. The selected conditional formatting is applied to the selected cell range.
- **E.** Sorting



- 1. Editing
- 2. Filter
- 3. Sorting
- 4. Conditional Formatting
- 5. Sort A to Z (text), Sort Smallest to Largest (numbers).

### **Periodic Assessment 1**

(Based on chapters 1 to 3)

- **A.** 1. The rightmost digit before the fractional part of a binary number is known as LSD.
  - 2. Hexadecimal number system consists of 16 digits, 0 to 9 and A to F.
  - 3. In BEDMAS rule, E stands for exponents.
  - 4. \$ sign can be used for absolute and mixed referencing.
  - 5. Conditional Formatting command is present under Home tab.
- **B.** 1. It is commonly used to display the data in the form of vertical bars. It is used to show the changes in data over a period of time or comparison among different data items. This chart can be used to depict and compare the results of your friends.

- 2. It is a circular chart divided into sectors where each sector shows the relative size of each value. It always shows only one data series. You can use pie chart to explain the distribution of the various gasses in the atmosphere.
- 3. It is used to display the quantitative magnitude of the data graphically. You can use this chart to show the level of depletion of ozone layer in the atmosphere.
- 4. Bar chart displays the data in the form of long rectangular rods also called bars. This chart can be used to differentiate the individual element of any comparison. You can use this chart to show Cost Price and Selling Price of different items.
- 5. They show the correlations between the two sets of values. This chart can be used to show the relation between the degradation of soil quality due to the increase in population.

C.	1. Decimal	Octal	Scientific	Binary	
	2. A	С	F	H	
	3. Absolute	Mixed	Relative	Particular	
	4. Today	Year	Average	Day	
D.	1. c	2. e	3. b	4. a	5. d

### 4. More on Animate CC



### Exercise

A.	1. b	2. c	3. c	4. c	5. b
В.	1. T	2. T	3. F	4. F	5. T

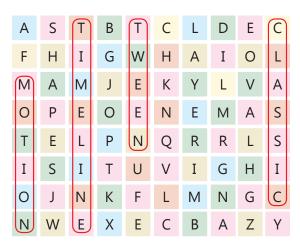
- **C.** 1. The movement of an object in-between the frames is called Tween.
  - 2. (i) Motion Tween (ii) Shape Tween (iii) Classic Tween
  - 3. Classic Tween is used for transition purpose. Whereas, Motion Tween uses symbols to create movement, size, rotation changes, fades, etc.
- **D.** 1. Layers are sheets on which you place your drawings, animations and objects. They allow you to keep the elements of the animation separate. These are similar to transparent sheets, stacked one on top of the other.
  - 2. Perform the following steps to format text in Animate:
    - **Step 1:** Click on the Text Tool from the Tools panel.
    - Step 2: Under the Properties panel choose the font size, color, style, etc.
    - **Step 3:** Type the text "ANIMATE" on the stage.

We can individually split the text with the Break Apart option.

- **Step 4:** Select the text with Selection Tool.
- E. Break Apart







# Tags and Attributes in HTML



A.	1. b	2. d	3. c	4. c	5. a
В.	1. markup	2. <b></b>	3. <p></p>	4. <sub></sub>	5. <sup></sup>

- 1. HR tag is used when you want to divide your web page into different sections. C.
  - 2. The <BR> tag is used to break lines of text.
  - 3. The <SUP> tag is frequently used to write algebraic formulas.
- 1. HR tag is used when you want to divide your web page into different sections. The <HR> tag has following attributes:

- WIDTH: It displays the horizontal ruler of the specified width in pixels or in percentage. <hr width="550"> or <hr width="80%">
- SIZE: It controls the height or the thickness of the horizontal ruler. <hr size="4">
- COLOR: It is used to apply the background color. <hr color="pink">
- ALIGN: It is used to align the horizontal ruler left, right and center. <hr align="right">

- 2. HTML provides the <FONT> tag to change the certain properties such as font size, face and colour of a block of text on a web page. <FONT> tag provides three attributes which you can use in the following way:
  - (i) FACE: It allows you to set the font family such as Times New Roman, Verdana. <font face="Times New Roman"> Animation
  - (ii) SIZE: It allows you to set the font size. <font size="4"> Animation
  - (iii) COLOR: It allows you to set the font color. <font color="green"> Animation
- 3. a. <SUB> tag is used to turn the enclosed text into a subscript. For example, H2O is coded as H<sub>2</sub>O
  - <SUP> tag is used to turn the enclosed text into a superscript. For example, E=mc2 is coded as E=mc<sup>2</sup>
  - b. The Bold tag is written as <B>. This tag is used to give bold effect to your text. On the other hand, the Italic tag is written as <I>. This tag is used to give italic effect to your text.



- 1. Center
- 2. Attribute
- 3. Heading

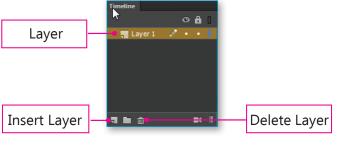
### **Periodic Assessment 2**

(Based on chapters 4 & 5)

- **A.** <body bgcolor="red"> and not
- **B.** (This question was printed incorrectly in the book, please correct this question in your textbook) Write the names of four attributes of the <HR> tag in HTML.
  - 1. \_\_\_\_\_
- 2.
- 3. \_\_\_\_\_
- 4. \_\_\_\_\_

- Ans. 1. WIDTH
- 2. SIZE
- 3. COLOR
- 4. ALIGN

C.



- 1. Ctrl + L
- 2. F8
- 3. Ctrl + Enter
- 4. F5



#### **Test Sheet 1**

(Based on chapters 1 to 5)

Α.	1. a	2. b	3. b	4. b	5. b
	6. b				
	7. (This question w	as printed incorrectly	in the book, please co	orrect this question in y	our textbook)
	Which languag	e describes the struc	ture of a web page?		
	a. Hypertext	b. Markup	c. Programming	d. None of these	
	Ans. b				
	8. c	9. b			
В.	1. decimal	2. 10	3. Gridlines	4. Legend	
	5. (This question w	as printed incorrectly	in the book, please co	orrect this question in y	our textbook)
	The	tag is used to wri	te the formula of (a+	b)^2.	
	Ans. <sup></sup>				
	6. Layers	7. Properties			
C.	1. F	2. F	3. F	4. T	
	5. (This question w	as printed incorrectly	in the book, please co	orrect this question in y	our textbook)
	Conditional Fo	rmatting is only used	I with numeric data.		
	Ans. F				
	6. T	7. F			
D.				al form. It makes it eands among the value	

- - 2. Sorting data means to organise the data in ascending or descending order.
  - 3. (i) Motion Tween (ii) Shape Tween (iii) Classic Tween
  - 4. The five components of charts are as follows:

Data Series: It is related to the set of values. It is represented by the bars or slices that represent the data values.

Data Labels: It includes data values, category name, series name, legend keys and values from cells.

Gridlines: These can be either horizontal or vertical lines depending on the selected chart type. It makes it easier to read and understand the values.

**Legend:** It is a key which shows the meanings of symbols and colours used in the chart.

**Chart Area:** It includes all the objects and elements of a chart.

5. To apply conditional formatting to a series of data, follow these steps:

- **Step 1:** Select the data to which formatting is to be applied.
- **Step 2:** Click on the Conditional Formatting command from Styles group under Home tab.

A drop-down list appears. This list shows various criteria.

- **Step 3:** Select the desired conditional formatting. In this case, we have selected the Orange Data Bar option under the Data Bars category. The selected conditional formatting is applied to the selected cell range.
- 6. (This question was printed incorrectly in the book, please correct this question in your textbook) Explain the uses of the <FONT> tag and its various attributes.
  - Ans. HTML provides the <FONT> tag to change the certain properties such as font size, face and colour of a block of text on a web page. <FONT> tag provides three attributes which you can use in the following way:
    - (i) **FACE:** It allows you to set the font family such as Times New Roman, Verdana.
      - <font face="Times New Roman"> Animation
    - (ii) **SIZE:** It allows you to set the font size.

<font size="4"> Animation

- (iii) **COLOR:** It allows you to set the font color.
  - <font color="green"> Animation
- 7. Perform the following steps to format text in Animate:
  - **Step 1:** Click on the Text Tool from the Tools panel.
  - **Step 2:** Under the Properties panel choose the font size, color, style, etc.
  - **Step 3:** Type the text "ANIMATE" on the stage.

We can individually split the text with the Break Apart option.

**Step 4:** Select the text with Selection Tool.

### 6. Lists and Tables in HTML



#### Exercise

- . 1. c 2. a
- 3. c

- 4. d
- 5. a

**B.** 1. F.

2. F

3. F

- 4. F
- 5. T

- **C.** 1. ordered list
- 2. list item
- 3. <UL>
- 4. disc
- 5. <CAPTION>

**D.** 1. A list is a collection of related items.

- 2. Table represents data in the form of rows and columns.
- 3. The description list is a type of list in which terms with their definitions are displayed.
- **E.** 1. The main difference between ordered list and unordered list is that the ordered list displays the items in a sequential manner and unordered list displays items in an non-sequential manner.
  - 2. The attributes of the <TABLE> tag are BORDER, BORDERCOLOR, FRAMES, BGCOLOR.
  - 3. The ROWSPAN attribute applies when a single cell is extended for more than a single row and the COLSPAN attribute applies when a single cell is extended to more than a single column.
- **F.** 1. <OL> tag 2. <TABLE> tag





### 7. More on Internet



**A.** 1. a

2. d

3. a

4. a

5. b

6. a

**B.** 1. F

2. F

3. T

4. F

5. F

6. T

- **C.** 1. Internet is a computer network that connects hosts and end systems throughout the world.
  - 2. Yes, we can send a video file as attachment in an e-mail.
  - 3. Google Docs option is used to create word file on Google Drive.
  - 4. Two modes of payment are Net Banking and E-Wallet.
- **D.** 1. Signing in is the process to open a session with an account that is already created. To sign in, double-click on web browser icon click on sign in button Enter user name and password click on Next button.
  - 2. E-mail has several features. Some of them are as follows:
    - (i) Ability to attach the files along the message.
    - (ii) Ability to store the information such as message and contact list.
    - (iii) Ability to send Multipurpose Internet Mail Extensions (MIME) type files.
  - 3. A blog or weblog is an informational website that often contains information on a particular subject. Podcasts and Photologs are types of blogs.
  - 4. E-commerce has several advantages. Some of them are:
    - (i) It allows us to choose a product from a broad range of products.
    - (ii) It saves our money and time.
    - (iii) It allows us to sell or buy products and services at any time.
- **E.** He can send music file by using attachment option.





### **Periodic Assessment 3**

(Based on chapters 6 & 7)

```
A. <!DOCTYPE html>
  <html>
  <head>
  <style>
  table {
   font-family: arial, sans-serif;
  border-collapse: collapse;
  width: 100%; }
  td, th {
  border: 1px solid #dddddd;
  text-align: left;
  padding: 8px;
  th { text-align: center}; }
  </style>
  </head>
  body>
  <h2>HTML Table</h2>
   Permanent Gases of the Atmosphere 
   Constituent
  Percent by Volume
   Concentration
  Nitrogen
   78.084
   780,840.00
   Oxygen
   20.986
   209,460.00
```

```
Argon
0.934
9340.00
Carbon Dioxide
0.036
360
Neon
0.00182
18.2
Helium
0.000524
5.24
Krypton
0.000114
1.14
Hydrogen
0.00005
 0.5 
</body>
</html>
```

- B. 1. Laughing Out Loud
  - 2. See You
  - 3. See You Later
  - 4. By The Way



- 5. Frequently asked Questions
- 6. As Soon As Possible
- **C.** <BODY>

List of Indian States with their capitals.

<DL>

<DT>A. Haryana

<DD>Chandigarh

<DT>B. Gujarat

<DD> Gandhinagar

<DT>C. West Bengal

<DD> Kolkata

<DT>D. Rajasthan

<DD> Jaipur

</DL>

</BODY>

## 8. Algorithms and Flowcharts



Δ	1. b	2. c	3. c
н.	1. D	۷. ر	5. C

**B.** 1. F 2. T 3. F

**C.** 1. algorithm 2. connectors 3. Consistent

- **D.** 1. Algorithm is a set of steps in a sequential manner to solve a problem or to complete a task.
  - 2. Flowchart is a graphical representation of the sequence of operations in an information system or program.
- **E.** 1. The benefits of using flowcharts are:
  - It provides a better understanding of a problem.
  - It facilitates a programmer to analyse the problem in detail.
  - 2. Process symbol shows a process or action step whereas input/output box represents material or information entering or leaving the system.
- **F.** a. Input/Output
  - b. Decision
  - c. Input/Output



W	Т	Α	U	F	0	F	I	L	С	О	F	I	L
R	V	D	Е	L	R	Е	Т	I	U	R	Ε	Т	I
В	A	L	G	0	R	I	Т	Н	M	Ν	D	R	Ν
W	I	Ν	D	W	W	S	0	R	0	W	S	0	Т
Т	Ν	0	R	С	W	S	W	J	D	W	S	W	Е
Е	Т	L	L	Н	D	I	Н	В	Е	0	I	Н	R
Χ	Е	U	I	А	Е	Н	Е	K	Р	L	Н	Е	Р
Т	R	М	Ν	R	C	0	Ν	Ν	Ε	С	Т	0	R
Υ	F	Ν	U		I	Χ	G	I	Ν	I	Χ	G	Е
P	R	0	С	Е	S	S	G	I	R	Е	S	G	Т
Υ	С	Ν	Р	R	I	S	G	I	R	Е	S	G	Е
Υ	Е	Ν	F	L	0	W	L	I	Ν	E	S	G	R
Υ	Е	Ν	Р	R	N	C	0	М	Р	I	L	Е	R

## 9. Introduction to Programming



### Exercise

**A.** 1. b

2. a

3. d

4. d

**B.** 1. Instructions

2. assembler

3. String

4. input()

5. False

- **C.** 1. An assembler is a program used to translate assembly language into machine language so that the computer can understand it.
  - 2. A computer language is the medium by which instructions are transmitted to the computer to perform a specific task.
  - 3. A data type specifies the type of value a variable can contains.
  - 4. Precedence of operators determines the order in which the operators are executed.

- **D.** 1. Following are the relational operators provided by Python:
  - == Equal to
  - != Not equal
  - > Greater than
  - < Less than
  - >= Greater than or equal to
  - <= Less than or equal to

For example, == operator: It checks if the values of two operands are equal or not. If yes, then the condition becomes true.

2. Comments in Python can be used to explain parts of the code. It can also be used to hide the code as well. Comments enable us to understand the way a program works. In python, any statement starting with # symbol is known as a comment.

**Single Line Comment:** In case, a user wants to specify a single line comment, then comment must start with the symbol #.

**Multiple-line Comment:** Python does not have a syntax for multiline comments. To add a multiple line comment, you could insert a # for each line.

3. Modes of Python IDLE are: Interactive Mode and Script Mode.

Interactive Mode is a command line shell which gives immediate result for each command.

The Script Mode saves the commands entered by the user in the form of a program.

4. a. Arithmetic operators perform arithmetic operations between two operands.

Example (x=7 and y=3) Output 10

- b. Comments in Python can be used to explain parts of the code. It can also be used to hide the code as well.
- c. A data type specifies the type of value a variable can contains.
- d. Variables are memory reference points where we store values which can be accessed or changed later.
- e. Logical operators are used to evaluate and decide.
- 5. a. AND returns true, if both operands are true.

Example: (x < 5) and (x < 10). Output: TRUE.

OR returns true, if one of the operands is true.

Example: (x < 5) or (x < 2). Output: TRUE.

b. Modulus Operator divides left hand operand by right hand operand and returns remainder.

Example: x % y. Output: 1

Division Operator divides left hand operand by right hand operand.

Example: x / y. Output: 3.

c. In case, a user wants to specify a single line comment, then comment must start with the symbol #.

Example: Program:

```
# printing a string
print("Hello world")
```

Output: Hello World

Python does not have a syntax for multiline comments. To add a multiple line comment, you could insert a # for each line.

Example: Program:

```
#printing a string
#print five names
print("Hello World")
print("Rachna")
print("Sambhav")
print("Akshat")
print("Tushar")
Output: Hello World
```

Rachna

Sambhav

Akshat

Tushar



#### **Output:**

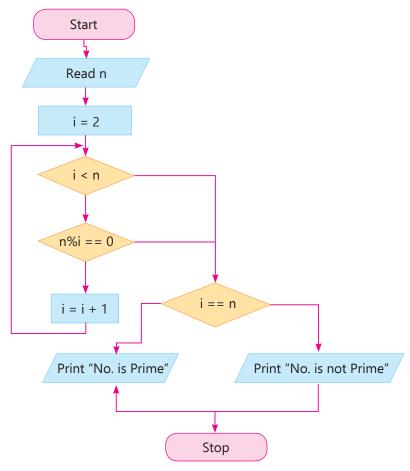
- 1. 2.0
- 2. 12
- 3. 10 20 30
- 4.6

### **Periodic Assessment 4**

(Based on chapters 8 & 9)

- **A.** 1. Start/Stop
- 2. Process
- 3. Decision
- 4. Input/Output

В.



```
C. 1. # Python program to convert kilometer to meter
    km = float(input('Enter value in kilometer: '))
    m = km * 1000.0
    print('Meter = ',m)
2. c = float( input('Enter the temperature in Celsius: '))
    f = (c * 1.8)+32
    print ('Temperature in Fahrenheit = ', f)
```

### **Test Sheet 2**

(Based on chapters 6 to 9)

A. 1. b 2. c

3. c

4. a

5. d

6. b

7. d

8. a

1. markup B.

2. <SUB>

3. list item

4. <CAPTION>

5. Guido van Rossum

6. input()

7. Bcc

8. Blog

C. 1. T 2. F

3. F

4. F

5. T

6. F

7. F

8. F

1. HR tag is used when you want to divide your web page into different sections.

2. HR tag is used when you want to divide your web page into different sections.

The <HR> tag has following attributes:

• WIDTH: It displays the horizontal ruler of the specified width in pixels or in percentage.

• SIZE: It controls the height or the thickness of the horizontal ruler.

COLOR: It is used to apply the background color.

ALIGN: It is used to align the horizontal ruler left, right and center.

- 3. A list is a collection of related items.
- 4. The attributes of the <TABLE> tag are BORDER, BORDERCOLOR, FRAMES, BGCOLOR.
- 5. The value 8 is stored in the memory location named a.
- 6. Comments in Python can be used to explain parts of the code. It can also be used to hide the code as well. Comments enable us to understand the way a program works. In python, any statement starting with # symbol is known as a comment.

Single Line Comment: In case, a user wants to specify a single line comment, then comment must start with the symbol #.

Multiple-line Comment: Python does not have a syntax for multiline comments. To add a multiple line comment, you could insert a # for each line.

- 7. Internet is a computer network that connects hosts and end systems throughout the world.
- 8. Signing in is the process to open a session with an account that is already created. To sign in, double-click on web browser icon click on sign in button Enter user name and password click on Next button.