

# Class 6

## 1. Advanced Features of MS PowerPoint 2016

### Let's Relate (Page-5)

Do it yourself.

### Brush Up (Page-12)

1. Table, 2. Audio, 3. Video, 4. Hyperlink

### Exercise

**A.** 1. (b), 2. (c), 3. (d), 4. (c), 5. (b)

**B.** 1. Table, 2. sound, 3. Online video, 4. Audio Styles, 5. Action

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

**D.** 1. We can insert Excel Spreadsheet in a PowerPoint, which looks like a table. To insert Excel Spreadsheet, follow the given steps: **Step 1** : Place the cursor where we want the table to appear. **Step 2** : Click on the **Insert** tab. Select the **Table** button and click on the **Excel Spreadsheet** option. **Step 3** : Now, the Excel Spreadsheet will appear on the screen. **Step 4** : Place the insertion point in the cell where we want to enter the data. **Step 5** : After entering the data in spreadsheet, click outside the spreadsheet. We will notice the table will be inserted on the slides. 2. To add our own sound in the presentation, follow the given steps: **Step 1** : Select the slide where we want to insert the recorded sound. **Step 2** : Select the **Insert** tab. Click the **Audio** drop-down arrow in the **Media** group. **Step 3** : Click the **Record Audio** option from the drop-down menu. **Step 4** : The **Record Sound** dialog box appears. **Step 5** : Type a name for our audio file in the **Name** field. **Step 6** : Click on the **Record** button to start recording, and when we have finished the recording, click on the **Stop** button. **Step 7** : To listen to the recorded sound, click on the **Play** button. **Step 8** : Click on **OK**. A small speaker icon will appear on the slide. **Step 9** : During the **Slide Show**, click on the **Speaker** icon to listen to the recorded sound. 3. To insert a video file from Internet, follow these steps : **Step 1** : Select the slide where you want to insert the video clip. **Step 2** : Select the **Insert** tab. Click the **Video** drop-down arrow in the **Media** group. **Step 3** : Select the **Online Video** option from the drop-down list. The **Insert Video** dialog box appears. **Step 4** : Click on the **YouTube** icon and type the keywords for the video you want to add. **Step 5** : Select the video and click on **Insert**. **Step 6** : Wait a few minutes for your video to load and when loaded, play the video. 4. Action buttons are some built-in button shapes which can be added to a presentation to link them to the another slides, files, web pages and e-mail addresses. Action button works like the hyperlink. 5. To remove a hyperlink, follow the given steps: **Step 1** : Right-click the hyperlink. **Step 2** : Click **Remove Hyperlink**.

## 2. More on Excel 2016

### Let's Relate (Page-17)

1. Formula Bar, 2. Name Box, 3. Toolbar, 4. Worksheet, 5. Status Bar, 6. Title bar

### Brush Up (Page-23)

1. Top Align, 2. Center Align, 3. Bottom Align, 4. Left Align

### Exercise

**A.** 1. (a), 2. (a), 3. (b), 4. (d), 5. (c)

**B.** 1. Formatting, 2. font, 3. right, 4. Splitting, 5. four

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

**D.** 1. Using the Home tab, most of the formatting effects can be applied to the text in the document. Some of them are as follows : • We can make the text bold, italic and underline. • We can increase or decrease the indent. • We can change the font type, size, colour and apply border, etc. • We can align the text horizontally or vertically. • We can merge or split cells. 2. Alignment is the setting of text flow or image relative to cell edges. In Excel, we can align text horizontally and vertically. Text alignment options are present under **Home** tab. 3. To delete columns, follow the given steps: **Step 1** : Select the column header and click the **Delete** drop-down button in the **Cells** group on the **Home** tab. Choose the **Delete Sheet Columns** option. Or Right-click on the column header, which we want to delete. Select the **Delete** option. **Step 2** : The selected column will be deleted and the contents lying to the right of this column will shift left by one column. 4. To change the column width, follow the given steps: **Step 1** : Select the column(s) that we want to change. **Step 2** : On the **Home** tab, in the **Cells** group, click **Format**. **Step 3** : Under **Cell Size**, click **Column Width** option in the appeared drop-down menu. **Step 4** : In the **Column Width** dialog box, type the value that we want. Click **OK**. 5. Excel follows general mathematical rules for calculations, which is Parentheses, Exponents, Multiplication, Division, Addition, Subtraction, or the acronym PEMDAS. Using parentheses allows us to change that calculation order. For doing calculations in an Excel cell we need to use arithmetic operators. We can easily get the result of a calculation if we follow these rules properly.

## 3. Formulas and Functions in Excel 2016

### Let's Relate (Page-33)

1. WORKBOOK, 2. FORMULA, 3. GENERAL, 4. OPERATOR

### Brush Up (Page-40)

1. 49, 2. 343, 3. 247, 4. -16

### Exercise

- A.** 1. (a), 2. (a), 3. (c), 4. (c), 5. (a)
- B.** 1. cell reference, 2. dollar, 3. range, 4. SUM(), 5. TODAY()
- C.** 1. T, 2. T, 3. T, 4. T, 5. T
- D.** 1. Using range names in Excel allows us to quickly navigate to areas of our worksheet and makes formulas much easier to create.  
2. Functions are the pre-designed formulas in Excel to perform both simple and complex calculations. Functions save time and eliminate the chance to write wrong formulas. The functions consist of two parts: the function name and its arguments. The arguments are included within the round brackets.  
**3. Rules to Enter a Function :** (i) Functions must begin with = sign. (ii) Function name must be a valid Excel name. (iii) Function must be followed by opening and closing parenthesis. (iv) Parenthesis contain arguments within it. If there are more than one argument, then they should be separated by comma.  
**4. Absolute reference :** This type of reference is used when we do not want to change the address of the cell while copying the formula to another cell. \$A\$10 is an example of absolute reference.  
**Mixed reference :** In this type of reference, either the row number is fixed or the column name is fixed. \$A10 or A\$10 is an example of mixed reference.  
**5.** This is a conditional function. It returns one value, if a condition we specify evaluates to True, and another value if that condition evaluates to False.

## 4. Introduction to Adobe Animate CC 2018

### Let's Relate (Page-47)

**Movie Name**—Puss in Boots : The Last Wish

**Characters**—Perrito, Puss in Boots

### Brush Up (Page-51)

1. Stage, 2. Ink Bottle tool, 3. New Document dialog box, 4. Pencil tool

### Exercise

- A.** 1. (c), 2. (a), 3. (d), 4. (b), 5. (a)
- B.** 1. animations, graphics, 2. Timeline, 3. Selection, 4. Fill, 5. Merge Drawing Mode
- C.** 1. F, 2. T, 3. F, 4. T, 5. F
- D.** 1. To create a document in Adobe Animate CC, follow the given steps:  
**Step 1 :** Click on the **File** → **New** option from the menu bar. The **New Document** dialog box opens.  
**Step 2 :** Select the **General** tab, click the **ActionScript 3.0** option from the **Type** section.  
**Step 3 :** Now set the dimensions for the Stage by entering new pixel values for the **Width** and **Height** on the right side of **New Document** dialog box.  
**Step 4 :** Choose the **Background color** as we desired. Here we are selecting white background.  
**Step 5 :** Click on the **OK** button. A new

document will be created in Animate CC 2018. **2.** The Tools panel has all the tools that we can use to create or modify drawings and text. We will note that few tools have a small triangle at their bottom-right end. When we click this triangle, a sub menu appears with more similar tools. **3.** Gradient fill is a multicolor fill in which one color gradually changes into another color. Animate CC lets us apply up to 15 color transitions to a gradient. **4.** There are three type of symbols in Animate: (i) **Movie Clip Symbol** : A movie clip symbol is used to reusable parts of a movie. In this symbol, we can apply color settings, blending modes and filters. (ii) **Button Clip Symbol** : A button clip symbol is used to create a user interface to perform various actions like starting, stopping, etc. In this symbol, we can apply color settings, blending modes and filters. (iii) **Graphic Symbol** : A graphic symbol is a static object, like a background image or text. In this symbol, we cannot apply color settings, blending modes and filters. **5.** Object drawing mode creates drawing objects. Drawing objects do not merge when overlaid over each other. Hence, when we move the objects apart, they look the same as they were originally. When the Object Drawing mode is turned off, the Merge Drawing mode becomes active. This is the default drawing mode in Animate. When we make overlapping shapes, the shape above cuts over the overlaid portion of the lower shape.

## 5. Introduction to HTML 5 and CSS

### Let's Relate (Page-60)

1. Yahoo, 2. Flipkart, 3. Facebook, 4. Amazon

### Brush Up (Page-65)

1. head, 2. title, 3. body, 4. html

### Exercise

**A.** 1. (b), 2. (b), 3. (b), 4. (c), 5. (b)

**B.** 1. markup, 2. Text, 3. Tags, 4. Empty, 5. Bgcolor

**C.** 1. T, 2. T, 3. T, 4. T, 5. T

**D.** 1. HTML stands for HyperText Markup Language. It is a markup language that describes the structure of the web pages. It allows us to create web pages that contain paragraphs, headings, links and block quotes. Some of the important characteristics of HTML are: (i) It is easy to understand and modify. (ii) It is platform independent language. (iii) It allows us to build tables. (iv) It allows us to add a link on the web page. **2.** In HTML, commands are known as **tags**. Tags describes how web page is displayed. All HTML tags are enclosed within the angle bracket (<>). An attribute is a special keyword used inside the tag to specify additional information about the tag such as alignment, font color, size of the text, etc. **3.** An HTML editor is a specialized software used to create and

edit web pages. There are mainly two types of HTML editors WYSIWYG Editor (eg. Adobe Dreamweaver) and Text Editor (eg. Notepad). **4.** The <Head> tag contains the title of the document. The content between the opening and the closing of the <Head> tag is not displayed in the web page. **5.** Cascading Style Sheet(CSS) is used to set the style in web pages that contains HTML elements. It sets the background color, font-size, font-family, color, etc. property of elements on a web page. Using CSS, we can specify a number of style properties for a given HTML element. Each property has a name and a value, separated by a colon(:). Each property declaration is separated by a semi colon(;).

## 6. Cyber Safety and Threats

### Let's Relate (Page-71)

**1.** Hypertext Transfer Protocol, **2.** Information Technology, **3.** Uniform Resource Locator, **4.** Advanced Research Projects Agency

### Brush Up (Page-73)

**1.** (c), **2.** (a), **3.** (d), **4.** (b)

### Exercise

**A.** **1.** (a), **2.** (a), **3.** (c), **4.** (b), **5.** (b)

**B.** **1.** Viruses, worms, **2.** Plagiarism, **3.** Cyberbullying, **4.** Cyber safety, **5.** Anti-virus

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

**D.** **1.** Cyber threat is a malicious act that seeks to damage data, steal data, or disrupt digital life in general. **2.** Viruses can replicate and spread to other systems by simply attaching themselves to the computer files. Worms are also self-replicating, just like viruses, but they do not need to get attached to another program to replicate. **3.** Cyberbullying is the use of technology to harass, threaten, embarrass, or target another person. It includes photos, messages, or pages that don't get taken down, even after the person has been asked to do so. **4.** Software piracy is the unauthorized use, copying or distribution of copyrighted software. It may take many forms, including unauthorized copying of software programs purchased legitimately, sometimes known as "end-user" piracy, which is illegal. **5.** Password protection is a security process that protects information accessible *via* computers that needs to be protected from certain users. Password protection allows only those with an authorized password to gain access to certain information.

- Use at least twelve characters.
- Use a combination of upper and lower-case letters and at least one number.
- Include at least one character that isn't a letter or number, like !, # or \$.
- Use a series of letters that only make sense to you, like the first letters of each word

in a sentence. • Use different passwords for different accounts. • Use multi-factor authentication (MFA).

## 7. Programming Basics

### Let's Relate (Page-78)

1. 19, 2. 0.625, 3. 3125, 4. 93

### Brush Up (Page-80)

1 3 5 4 2 6

### Exercise

**A.** 1. (b), 2. (b), 3. (a), 4. (b), 5. (c)

**B.** 1. oval-shaped, 2. Connectors, 3. Computer, 4. Assembler, 5. 3G language

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

**D.** 1. Programming is the process of writing instructions by a programmer to solve any problem or do any work on computer. 2. Flowcharts help programmers develop the most efficient coding because they can clearly see where the data is going to end up. 3. Following are some basic symbols that are used while making a flowchart: **Start/Stop Box**– The oval-shaped symbol indicates the beginning or end of a flowchart. **Input/Output Box**– This box is used to indicate the input or the output data. It is shaped like a parallelogram. **Processing Box**– The rectangle shaped box is used to show the processing step. Processing involves performing an operation such as addition, subtraction, etc. **Decision Box**– This box is shaped like a rhombus. It is used when we have to make a decision. A decision always involves a condition, depending on which an instruction will either be executed or not. **Flow Line**– Flow lines indicate the process direction. Each flow line usually connects two blocks. Flow lines can be straight lines, uni-directional arrow, or both-sided arrows, representing different kinds of connections between the steps. **Connector**– A connector is used to show a jump from one point in the process flow to another. It connects different parts of a flowchart that are split between pages. 4. A low-level language is a programming language that deals with a computer's hardware components and constraints. Low-level languages are divided into two categories: Machine Language and Assembly Language 5. **Interpreter**– An interpreter converts a program written in high-level language into machine language program line by line. It displays error of one line at a time and goes to the next line only after correction of that error and does not proceed till the error is rectified. **Compiler**– A compiler converts the entire HLL program into machine language at once and also displays errors for the whole program together.

## 8. Introduction to Python Programming

### Let's Relate (Page-88)

1. C++
2. Blue J
3. Quick Basic

### Brush Up (Page-93)

1. SYNTAX
2. COMMENT
3. INTERPRETER
4. VARIABLE

### Exercise

**A.** 1. (b), 2. (c), 3. (b), 4. (a), 5. (d)

**B.** 1. Comments, 2. 35, 3. Interactive, 4. explicit, 5. .py

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

**D.** 1. Python is a high-level, interpreted, general-purpose programming language. It was created by Guido van Rossum, and released in 1991. It is used for web development (server-side), software development, mathematics and system scripting. 2. Arithmetic operators are used with numeric values to perform common mathematical operations. The arithmetic operators are described in the following table :

Operators	Meaning	Example A = 10; B = 6	Output
+	Addition	A + B	16
-	Subtraction	A - B	4
*	Multiplication	A * B	60
/	Division	A / B	1
%	Modulus	A % B	4
**	Exponentiation	A ** B	1,000,000
//	Floor or Integer Division	A // B	1

3. Interactive Mode is a command line shell which gives immediate result for each statement, while running previously typed statements in active memory. Interactive mode of working means you type the command- one command at a time, and the Python executes the given command there and then gives you output in interactive mode. Script Mode in Python is where we first write the Python program inside a script file and execute it after that. In the Script Mode, we can view the code anytime that we have written inside the file, and we can modify it before executing it next time. 4. Python supports various data types. These data types defines the operations possible on the variables and the storage method. Below is the list of standard data types available in Python:

Text Type : str  
Numeric Types : int, float, complex  
Sequence Types : list, tuple, range

Mapping Type :	dict
Set Types :	set, frozenset
Boolean Type :	bool
Binary Types :	bytes, bytearray, memoryview
None Type :	NoneType

5. Comments are the lines in the code that are ignored by the interpreter during the execution of the program. Comments enhance the readability of the code and help the programmers to understand the code very carefully.

## 9. Artificial Intelligence (AI) and its Approaches

### Let's Relate (Page-103)

1. Sophia, 2. Aibo, 3. Unimate, 4. Atlas, 5. Ameca

### Brush Up (Page-106)

1. Alexa, 2. Robot, 3. Sophia, 4. Self-driven cars

### Exercise

**A.** 1. (c), 2. (a), 3. (b), 4. (c), 5. (a)

**B.** 1. Artificial Intelligence, 2. strong, 3. Agent, 4. physical, 5. Self-aware

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

**D.** 1. Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems. 2. In Artificial Super Intelligence, intelligent systems of machines will surpass intelligence of humans, and can perform any task better than even humans. 3. The task of AI is to design an agent program which implements the agent function. The structure of an intelligent agent is a combination of architecture and agent program. It can be viewed as:

$$\text{Agent} = \text{Architecture} + \text{Agent Program}$$

Following are the main three terms involved in the structure of an AI agent: **Architecture** : Architecture is machinery that an AI agent executes on. **Agent function** : Agent function is used to map a sequence of perceptions into an action. **Agent program** : Agent program is an implementation of agent function. An agent program executes on the physical architecture to produce function. 4. PEAS is a type of model on which an AI agent works upon. When we define an AI agent, then we can group its properties under PEAS representation model. It is made up of four words:

**P** : Performance measure

**E** : Environment

**A** : Actuators

**S** : Sensors

Here performance measure is the objective for the success of an agent's behaviour.

**PEAS for self-driving cars:**

The representation of PEAS for self-driving cars will be:

**Performance** : Safety, time, legal drive, comfort

**Environment** : Roads, other vehicles, road signs, pedestrian

**Actuators** : Steering, accelerator, brake, signal, horn

**Sensors** : Camera, GPS, speedometer, odometer, accelerometer, sonar.

5. There are four types of Artificial Intelligence approaches— (i) **Reactive Machines**— These machines are the most basic form of AI applications. Examples of reactive machines are games like Deep Blue, IBM's chess-playing supercomputer. The AI teams do not use any training sets to feed the machines, nor do the later store data for future references. Based on the move made by the opponent, the machine decides/predicts the next move. (ii) **Limited Memory**— These machines belong to the Class II category of AI applications. Self-driven cars are the perfect example. These machines are fed with data and are trained with other cars' speed and direction, lane markings, traffic lights, curves of roads, and other important factors, over time. (iii) **Theory of Mind**— Theory of mind is the concept where the bots will be able to understand the human emotions, thoughts, and how they react to them. If the AI-powered machines are ever to mingle with us and move around with us, understanding human behaviour is imperative. And then, reacting to such behaviours accordingly is the requirement. (iv) **Self-aware**— These machines are the extension of the Class III type of AI. It is one step ahead of understanding human emotions. This is the phase where the AI teams build machines with self-awareness factor programmed in them. Building self-aware machines seem far-fetched from where we stand today.

- E.** 1. Artificial Intelligence, 2. Artificial Narrow Intelligence, 3. Artificial General Intelligence, 4. Artificial Super Intelligence, 5. Performance, Environment, Actuators, Sensors