

# IT CODEZILLA

## (WINDOWS 10 & 11, MS OFFICE 2021/19)

### Teachers Reference Manual

### Pedagogical Guide for Teachers

TRMs can be accessed from Teachers Corner at [www.eduitspl.com](http://www.eduitspl.com)

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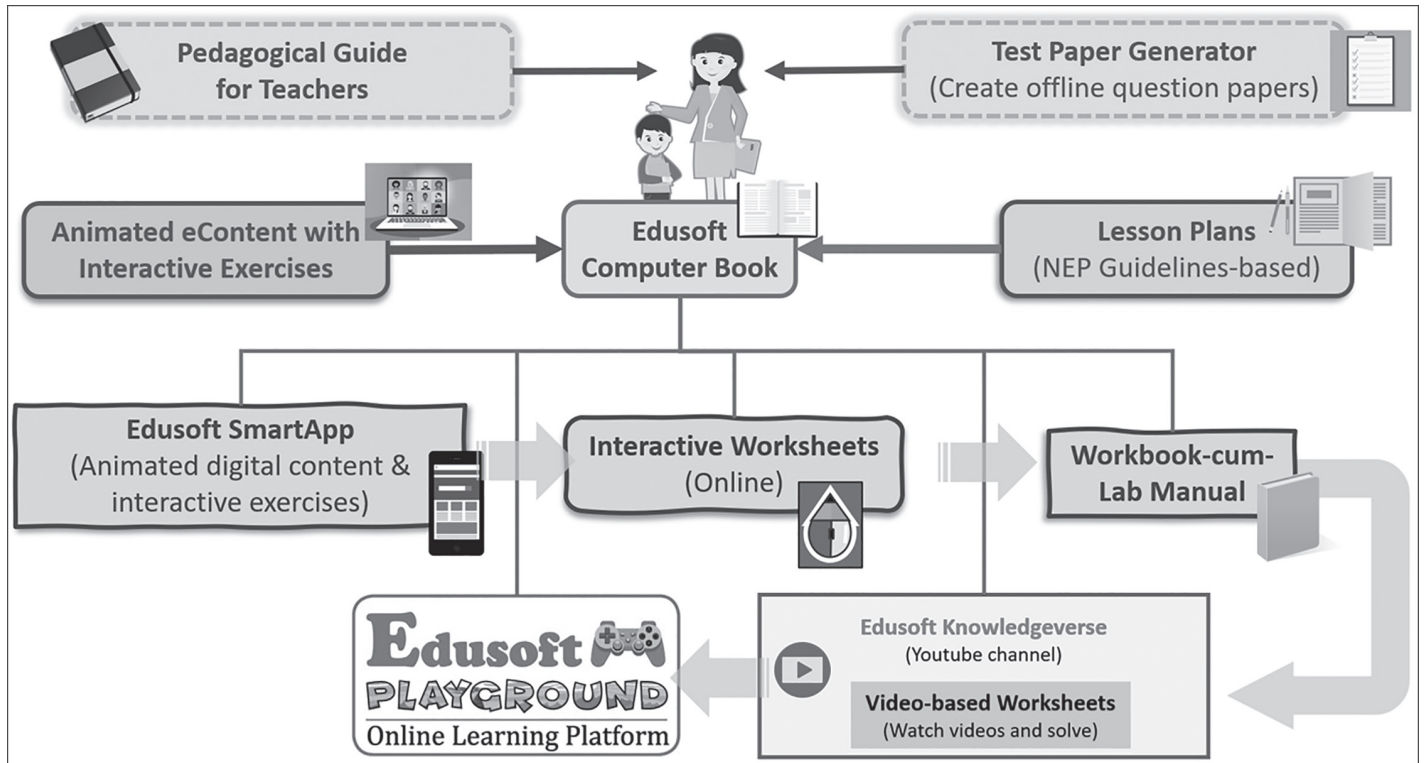
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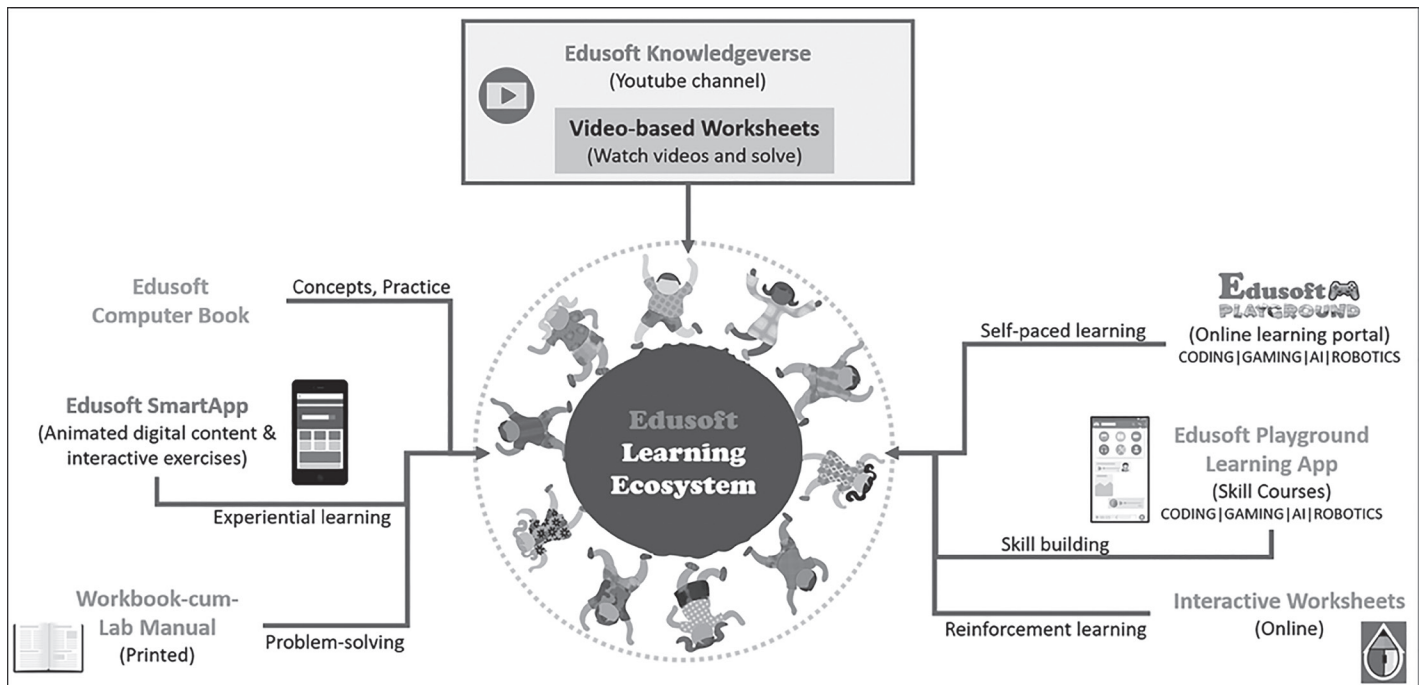
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# EDUSOFT TEACHING-LEARNING ECOSYSTEM



# EDUSOFT LEARNING ECOSYSTEM FOR STUDENTS



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## Chapter 1 – Understanding Machines

### Exercises

**A. Choose the correct answer.**

1. B                      2. B                      3. A                      4. A                      5. B

**B. Write T for true and F for false in front of the following statements.**

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

**C. Fill in the blanks.**

1. Natural      2. Automatic      3. Human or animal      4. Solar power      5. Computer

**D. Guess and write the word by combining the pictures.**

1. Machines are man-made things. They help us to do work in a easy way and save our time and energy.
2. Tress, Plants, and Animals. (any other natural things are also correct)
3. Bicycle, Nail cutter (any other manual machines are also correct)
4. Mountain, Rock, and water (any other non-living natural things are also correct)
5. Computer, Fan, Freezer (any other automatic machines are also correct)

**E. Match the following columns.**

1. B                      2. A                      3. D                      4. C                      5. E

## Chapter 2 – Computer: A Digital Wonder

### Exercises

**A. Choose the correct answer.**

1. B                      2. A                      3. B                      4. B                      5. B

**B. Fill in the blanks.**

1. Banks      2. Desktop      3. Various      4. Tickets      5. Fast

**C. Write T for true and F for false in front of the following statements.**

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

**D. Answer the following questions.**

1. School, Home, Office (any other places where computers are used are also correct)
2. a. Computers work very fast and accurately  
b. Computers are tireless  
c. Computers can store large information
3. Desktop and Laptop (any other types of computers are also correct)

4. a. Type stories
- b. Drawing and painting
- c. Mathematical calculation
- d. Play games

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## Chapter 3 – Computer: Physical Features

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### Exercises

**A. Choose the correct answer.**

1. B                      2. A                      3. C                      4. A                      5. C

**B. Fill in the blanks.**

1. Monitor              2. Joystick              3. CPU box              4. Two                      5. CPU

**C. Write T for true and F for false in front of the following statements.**

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

**D. Answer the following questions.**

1. CPU is called as the brain of the computer.
2. A computer mouse has two buttons and a wheel in between.
3. Printer, Speakers, and Joystick (any other additional parts of computers are also correct)
4. Keyboard helps to write numbers and words.

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## Chapter 4 – Computer Mouse

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### Exercises

**A. Choose the correct answer.**

1. C                      2. B                      3. A                      4. B                      5. C

**B. Fill in the blanks.**

1. Wireless mouse      2. Left                      3. Index                      4. Middle                      5. Scrolling

**C. Match the following columns.**

1. B                      2. A                      3. D                      4. C                      5. E

**D. Write T for true and F for false in front of the following statements.**

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

**E. Answer the following questions.**

1. Mouse tail or cable, left button, right button (any other parts of a mouse are also correct)
2. Use index finger to use left button and middle finger to use right button.
3. Pressing left mouse button just once to select an object on the computer screen is called single click.
4. To drag a mouse, click and hold the left mouse button while moving the mouse.

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## Chapter 5 – Explore Your Keyboard

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### Exercises

**A. Choose the correct answer.**

1. A                      2. C                      3. B                      4. B                      5. C

**B. Fill in the blanks.**

1. Cursor              2. Alphabet              3. Caps Lock              4. Arrow keys              5. Spacebar

**C. Write T for true and F for false in front of the following statements.**

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

**D. Answer the following questions.**

1. Alphabetical keys are used to type letters and words.
2. Caps Lock key locks the alphabetical keys to type in capital letters.
3. Four arrow keys are- left, right, up, and down.
4. Backspace key erases anything typed on the left of the cursor.

**E. Match the following keys with their functions.**

1. D                      2. E                      3. A                      4. B                      5. C

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## Chapter 6 – Tux Paint: Budding Picasso

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### Exercises

**A. Choose the correct answer.**

1. D                      2. C                      3. B                      4. A                      5. C

**B. Fill in the blanks.**

1. Colors palette    2. Canvas Area    3. Toolbar              4. Redo              5. Save

**C. Match the following columns.**

1. D                      2. B                      3. A                      4. E                      5. C

**D. Unscramble the words related to Tux Paint.**

1. CANVAS              2. UNDO              3. PENGUIN              4. OPEN

**E. Answer the following questions.**

1. Paint, Stamp and Shapes (any other tools of the toolbar are also correct)
2. Undo button cancel the previous action in Tux Paint.
3. To save drawing, click on the Save button in the toolbar.
4. To make a new drawing, click on new button in the toolbar → Select the background colour → Click on Open button.

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## Chapter 7 – Kidlo Coding Game Lab

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### Exercises

**A. Choose the correct answer.**

1. To help computer do a task, we must give *Instructions* to it.
2. For a computer, each instruction is a *Step*.
3. To do any task, we need to know the *Steps* to do it.  
\* To do a task, we must take One *step* at a time.
4. To do any task, we need to know the *Step* to do it.  
\* We give instructions to the computer in correct *Order* to do task.
5. We should decide *Steps* to do a task.  
\* Telling a computer to do a task is called *Coding*.

**B. Fill in the blanks.**

1. Step
  2. Program
  3. Tasks
  4. Order
  5. Programming\*
- \* Giving a program to a computer to run is called \_\_\_\_\_.

**C. Write T for true and F for false in front of the following statements.**

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

**D. Answer the following questions.**

1. Telling a computer to do a task is called coding.
2. Giving a program to a computer to run is called programming.
3. Wake up on time → Get dressed in school uniform → Eat healthy breakfast → Pack the school bag → Head to school (answer may vary student to students)
4. With the help of your teacher: click on start button → search and locate Kidlo Coding Game for kids → click on the game icon to open



### Chapter 1 – Computers are Everywhere

#### Exercises

**A. Choose the correct answer.**

1. A                      2. B                      3. C                      4. D                      5. A

**B. Fill in the blanks.**

1. Homework      2. Book, cancel      3. Police              4. Banks              5. Smartphone

**C. Write T for true and F for false in front of the following statements.**

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

**D. Match the following columns.**

1. B                      2. C                      3. D                      4. E                      5. A

**E. Answer the following questions.**

- School, Bank, Hospital, and Shops (any other places are also correct)
- Keep records of money deposited and employees
  - Computer helps in booking and cancelling hotel rooms
- Computers are used in hospital to diagnose various diseases, operate, scan, and test the patients.
- Computer helps to complete homework.
  - Learn new things using the internet.
- Computer helps to maintain details of work and projects, prepare reports and various documents.

### Chapter 2 – Computer Devices

#### Exercises

**A. Choose the correct answer.**

1. B                      2. C                      3. A                      4. D                      5. C

**B. Fill in the blanks.**

1. Keyboard      2. Optical disks      3. Printout              4. CPU              5. Input

**C. Write T for true and F for false in front of the following statements.**

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

**D. Match the following pictures with their functions.**

1. D                      2. A                      3. B                      4. C

**E. Answer the following questions.**

- The device that shows the result of all the work done on computer is called output device. E.g. Monitor and Printer (examples of any other output devices are also correct)
- The devices that are connected to a computer are known as peripheral devices.
- The device that stores and keep safe work, data and information for future use is called storage

device. E.g. Hard Disk Drive and Pen drive (examples of any other storage devices are also correct)

- The device that give instructions and information to computer is called input devices. E.g. Keyboard and Mouse (examples of any other input devices are also correct)
- Smartphone and ATM are examples of devices which act as input and output devices at the same time.

**F. Read the riddles carefully and write the missing letters to complete the name.**

- MONITOR
- MICROPHONE
- WEBCAMERA
- KEYBOARD

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## Chapter 3 – Working on a computer

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### Exercises

**A. Choose the correct answer.**

- B
- B
- B
- C
- C

**B. Fill in the blanks.**

- Search bar
- Fifth
- Start menu
- Wallpaper
- Taskbar

**C. Match the following pictures with their functions.**

- C
- D
- A
- B

**D. Write T for true and F for false in front of the following statements.**

- T
- F
- F
- T
- T

**E. Answer the following questions.**

- The picture over the desktop is called wallpaper.
- i. Keep your feet, neck, and shoulders relaxed ii. Bend your elbows comfortably at a 90° angle.
- i. Use a clean, soft, and dry cloth to clean the computer. ii. Be gentle when pressing the key on the keyboard.
- Full form of UPS – Uninterruptible Power Supply
- i. Avoid eating or drinking while using the computer.  
ii. Never play with the computer's wires.

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## Chapter 4 – Introduction to WordPad

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### Exercises

**A. Choose the correct answer.**

- D
- A
- C
- C
- B

**B. Fill in the blanks.**

- Ribbon
- Work area
- File name
- Double
- Superscript

**C. Match the following pictures with their functions.**

1. C                      2. D                      3. B                      4. A

**D. Write T for true and F for false in front of the following statements.**

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

**E. Answer the following questions.**

- Title Bar, Tab, Ribbon, Control button, Work area and Zoom control.
- Changing the appearance of character, alignment and size of text is called formatting.
- Bold: It makes the selected text bold.
  - Italics: It makes the selected text italics.
  - Underline: It underlines the selected text.
- Control button are used to maximize, minimize, restore, and close the WordPad window.

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## Chapter 5 – Begin with MS Paint

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### Exercises

**A. Choose the correct answer.**

1. A                      2. B                      3. C                      4. B                      5. B

**B. Fill in the blanks.**

1. Ribbon              2. Edit Colors              3. Fill with color              4. 2                      5. Erase

**C. Write T for true and F for false in front of the following statements.**

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

**D. Match the following pictures with their functions.**

1. C                      2. D                      3. B                      4. E                      5. A

**E. Answer the following questions.**

- Colour palette helps to select various colours to fill in the drawing.
- Foreground colour is also called as colour 1. It is used for pencil, fill colour, text and outlines of the drawing.
- Title Bar, Tab, Ribbon, Control button, Canvas and Zoom. (any three)
- Eraser tool is used to remove mistakes of the drawing.
- Line tool is one of the tools of MS Paint that draws straight lines of different thickness and colours as per the drawing.

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## Chapter 6 – More on Tux Paint

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### Exercises

**A. Choose the correct answer.**

1. B                      2. D                      3. A                      4. A                      5. C

**B. Fill in the blanks.**

1. Fill                      2. Slide show              3. Foam                      4. Left                      5. Enter

**C. Write T for true and F for false in front of the following statements.**

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

**D. Answer the following questions.**

1. Magic tools is used to add various effects and patterns to the drawing in the Tux Paint.
2. Pressing the left mouse button and moving the mouse to create the desired drawing is called free hand drawing.
3. Slides are used to run all the drawing and text one by one in the Tux Paint by using a slide show.

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## Chapter 7 – Logic Building with Kidlo Game Lab

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### Exercises

**A. Choose the correct answer.**

1. D                      2. C                      3. C                      4. B                      5. A

**B. Fill in the blanks.**

1. Thinking              2. Arrange              3. Instructions              4. Steps                      5. Looping

**C. Match the following pictures with their functions.**

1. C                      2. D                      3. B                      4. A

**D. Write T for true and F for false in front of the following statements.**

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

**E. Answer the following questions.**

1. Telling the steps to a computer to do a task is called coding.
2. Doing some steps again and again is called looping.
3. A loop block allows to repeat a set of instructions multiple times, enabling to execute the steps again and again.

## Class 3

### Chapter 1 – Working of Computers

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### Exercises

**A. Choose the correct answer.**

1. D                      2. A                      3. A                      4. B                      5. D

**B. Fill in the blanks.**

1. Software      2. Memory Unit      3. Output      4. CPU      5. Software

**C. Write T for true and F for false in front of the following statements.**

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

**D. Find the odd one out and write in the space provided.**

1. IPO      2. Monitor      3. MS Paint      4. Windows

**E. Answer the following questions.**

1. The process of Input-processing -output of data is called I-P-O cycle.
2. Hardware is physically present and can be touched.  
Software is a set of instructions or programs to perform a particular task.
3. CPU is the brain of the computer. It processes the data as the instructions are given to it.
4. The CPU has three major parts: Arithmetic and Logic Unit, Control Unit, Memory Unit.

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## Chapter 2 – Introduction to Windows 10

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### Exercises

**A. Choose the correct answer.**

1. D      2. A      3. C      4. C      5. A

**B. Fill in the blanks.**

1. Pinning
2. Notification
3. Command Line Interface
4. Booting
5. Title Bar

**C. Write T for true and F for false in front of the following statements.**

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

**D. Answer the following questions.**

1. Operation system is a software that controls and manages all parts of a computer.
2. Desktop is the first screen that we see after switching on the computer.
3. Start menu helps to open various programs installed on the computer and power button to restart and shut down the computer.
4. Parts of a window are: Title Bar, Tabs, Ribbons, Work area, scroll bars and Status bar. (any four)

**E. Who Am I?**

1. START MENU
2. WORK AREA
3. DESKTOP BACKGROUND
4. TASK VIEW

---

## Chapter 3 – Manage your Data

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### Exercises

**A. Choose the correct answer.**

1. A                      2. C                      3. A                      4. A                      5. D

**B. Fill in the blanks.**

1. Folder                2. Image                3. File                    4. Desktop                5. Right

**C. Write T for true and F for false in front of the following statements.**

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

**D. Match the following pictures with their functions.**

1. C                      2. B                      3. A                      4. D

**E. Answer the following questions.**

1. A computer file stores our work on the computer and each file has a unique name.
2. Folder stores files and folders on the computer.  
A folder inside another folder is called a sub-folder.
3. This PC represents the computer and allows to see all the files, folders and drive on the computer.

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## Chapter 4 – MS Paint: More Tools

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### Exercises

**A. Choose the correct answer.**

1. A                      2. C                      3. A                      4. C                      5. D

**B. Fill in the blanks.**

1. Dragging    2. Rectangular tool    3. Magnifier tool    4. Cutout    5. File name

**C. Write T for true and F for false in front of the following statements.**

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

**D. Match the following with their function.**

1. b (Pick a colour from one part and will colour in other part)
2. a (Select an irregular area of a drawing)
3. d (Select the entire drawing)
4. c (Select rectangular shaped area of a drawing)

**E. Write the functions of the following tools.**

1. Colour picker tool picks a colour from one part of the figure and fill the same colour in any other part of the drawing.
2. Magnifier tool is used to zoom in and out on a part of the drawing.

3. The rotate or flip tool is used to rotate the whole drawing or a selected part of a drawing.
4. The free-from selection tool is used to select an irregular area of a drawing.

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## Chapter 5 – Stepwise Thinking with RoboMind

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### Exercises

**A. Choose the correct answer.**

1. D                      2. A                      3. B                      4. A                      5. A

**B. Fill in the blanks.**

1. 4                      2. Programmer                      3. Instruction Pane                      4. Tile                      5. Ctrl+M

**C. Write T for true and F for false in front of the following statements.**

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

**D. Match the following with their function.**

1. C                      2. D                      3. A                      4. B

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## Chapter 6 – Develop Logic with Blockly Games

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### Exercises

**A. Choose the correct answer.**

1. C                      2. D                      3. B                      4. C                      5. C

**B. Fill in the blanks.**

1. if-else                      2. else                      3. Maze                      4. Blocks                      5. Sequence

**C. Write T for true and F for false in front of the following statements.**

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

---

## Chapter 7 – Block Coding with Scratch

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### Exercises

**A. Choose the correct answer.**

1. A                      2. D                      3. A                      4. A                      5. C

**B. Fill in the blanks.**

1. Control                      2. Blocks                      3. Stage                      4. White                      5. 0

**C. In one line, write the use of the following blocks.**

1. This block checks when the user clicks on the sprite with mouse.

2. This block moves the sprite to given x, y coordinates in given seconds.
3. This is an event block. It is used to run the animation when clicked on Go button.
4. This block displays a speech bubble to the sprite for the specified amount of seconds.
5. It is a Music block to play music notes and beats with different musical instruments.

**D. Explore the codes of Experiential learning.**

Do it yourself

## Chapter 8 – Fun with Artificial Intelligence

This chapter is completely practical oriented.

### Class 4

## Chapter 1 – Windows GUI Look and Feel

### Exercises

**A. Choose the correct answer.**

1. D                      2. B                      3. D                      4. A                      5. C

**B. Fill in the blanks.**

1. Operating      2. 1                      3. Theme              4. Transparency      5. Screen Saver

**Competency-Based, High Order Thinking Skills Questions**

1. True. When a computer is turned on the operating system, such as Windows loads.
2. False. Changing background pictures every few minutes is not called a screensaver. A screensaver is a program that displays an animated image or moving pattern on the screen when the computer is idle for some time.
3. True. Personalization of Windows can indeed be quickly achieved using themes.
4. False. To update the time and date settings automatically in Windows, you typically need to go to “Settings” > “Time & language” > “Date & time” and toggle on the “Set time automatically” option.

## Chapter 2 – Computer Data

### Exercises

**A. Choose the correct answer.**

1. B                      2. C                      3. C                      4. D                      5. C

**B. Fill in the blanks.**

1. File, Folder      2. Sub Folder      3. Ctrl, Shift      4. Folders              5. This PC



**C. Answer the following questions.**

1. **Primary name:** Used to identify the file. E.g. myproject.docx (myproject is primary name).  
**Secondary name:** Identifies the file type. E.g. myproject.docx is a Word document.  
**File:** It is used for storing our work in the computer E.g. audio file, video file, graphics file, etc.  
**Folder:** It is used for storing our files or other folders.  
**Sub folder:** It helps to keep similar types of files so that one can share the entire file or folder as and when required.
2. Go to the Desktop and double click on the Recycle Bin. All the deleted files get displayed. Select the files to restore. Click on the Restore the selected items button under the Manage tab.
3. To move a file from the Desktop to C: drive, right-click on the Desktop file. A context menu appears, use the cut option and paste the file in the C: drive. The file moves from the Desktop to the C: drive.
4. To move a file from the Desktop to Recycle Bin, right-click on the Desktop file. A context menu appears, select the delete option to delete the file. A dialog box opens to confirm the delete. Clicking yes deletes the file.

**Competency-Based, High Order Thinking Skills Questions**

1. For Sudha to organize her bird, butterfly, and flower pictures on her computer, she can create the following folders and sub-folders:

Birds

Flying birds

Non-flying birds

Butterfly

Wild

Other

Flowers

2. To organize the drawings of the participants in the MS Paint and Tux Paint drawing competition, following folder structure can be created:
  - Tux Paint Drawings
    - Class 1
    - Class 2
  - MS Paint Drawings
    - Class 3
    - Class 4

---

## Chapter 3 – Introduction to MS Word

---

### Exercises

**A. Choose the correct answer.**

1. D                      2. C                      3. B                      4. A                      5. A

**B. Fill in the blanks.**

1. Password      2. Title bar      3. Quick Access      4. Top, Left      5. Cursor

**C. Mark the following statements as True or False.**

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

**D. Answer the following questions.**

1. Word Processor is a program that helps to enter text and formats it to make it look presentable. Google Docs and Abiword are examples of two popular word processors.
2. MS Word is used for typing, editing, and formatting text, as well as insert images, shapes and table. It also helps to apply special effects to the text.
3. MS Word includes Title bar, Tabs, Ribbons and Page or Document Area.
4. While typing press the Enter key to add a new paragraph. A Backspace key or Delete is used to delete the text.
5. By left clicking and dragging the mouse from the beginning till the end of the text to select it. Then release the mouse button. The text gets selected.

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## Chapter 4 – MS Word- Formatting Your Document

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### Exercises

**A. Choose the correct answer.**

1. B      2. A      3. B      4. C      5. C

**B. Fill in the blanks.**

1. Calibri
2. 23
3. 11
4. Sentence
5. Alphabet, Numbers, Roman numerals

**C. Answer the following questions.**

1. The three font styles include bold, underline and italics. E.g., to change the font style of the normal text use Ctrl+B to make the selected text look bold, Ctrl+U to underline the selected text and Ctrl+I to italicize the selected text.
2. Sentence case is the default case in MS Word. In this case, only the first letter of the first word is in the upper case. E.g., in 'Tom is clever' the first word Tom has a capitalized first letter T.

Whereas in Capitalize Each Word includes each word in the sentence in upper case. E.g., in 'Who Am I?' the first letter of each word is in upper case.

3. Justified text spreads the text evenly along the left and right margins. Home tab > Paragraph group > Justify button is the quickest way to justify the selected text.
4. Bullet lists are used when there is no particular sequence of points. E.g.
  - Flowers include lotus, jasmine, rose, lily, etc.
  - Animals like dogs, cats, cows, goats, etc.To list two or more items in a list. E.g.

- Fruits like apples, mangoes, etc.
- Vegetables like potatoes, tomatoes, etc.
- Seasons like summer, winter, etc.

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## Chapter 5 – Introduction to MS PowerPoint

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### Exercises



**A. Choose the correct answer.**

1. D                      2. A                      3. D                      4. A                      5. B

**B. Fill in the blanks.**

1. Gradient      2. Pattern      3. Multimedia      4. Texture      5. Themes

**C. Answer the following questions.**

1. Text alignment refers to the positioning of the text in the text box in horizontal and vertical manner. Left, right and center are three horizontal alignments while Top, middle and bottom are vertical alignments.
2. We can apply various backgrounds like Solid Fill, Gradient Fill, Picture or Texture Fill and Pattern Fill on slides.
3. A digital presentation represents a topic or an idea in an electronic or a digital form with multimedia effects like sound, graphics and animation. MS PowerPoint and OpenOffice Impress are two presentation programs.

**Competency-Based, High Order Thinking Skills Questions**

- A. 1. False (Slide needs a textbox to type)      2. True  
3. False (Only a copy of the slide is made in the memory which needs to be pasted)  
4. True      5. True

B. Students will do themselves.

C. In the Format Background pane, there's a Clipboard button in the Picture and Texture settings. It lets users paste images from the clipboard as slide backgrounds and saves time by avoiding the need to save them as files.

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## Chapter 6 – Introduction to Internet

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### Exercises



**A. Choose the correct answer.**

1. B                      2. C                      3. B                      4. D                      5. A

**B. Fill in the blanks.**

1. Telephone line      2. E-commerce      3. Hyperlink      4. Chat      5. Web address

**C. Answer the following questions.**

1. **URL:** It is the name for web address of the website or address to any resource on the internet, such as music, movie, video, etc.

**Website:** It is the prime online location on the internet that is identified by a unique web address or URL.

**Web page:** It refers to the single page of a website that provides information on any kind of topic on the internet. Many hyperlinked pages together make the whole website.

**Home Page:** It is the first web page that is displayed when we visit a website.

**Landing Page:** The first page of any event, advertisement, marketing campaign, etc. that pops up on clicking it.

**Chatbot:** A pop-up that chats with the visitor on banking and commercial websites to clarify doubts.

**Hyperlink:** A linked resource like text, image, or video on any part of the web page that is connected by clicking on it.

**Search Engine:** The specialized website that helps search things on the internet.

2. The internet is the network of networks that connect all digital devices like PCs, laptops, smartphones, etc. The internet helps search any kind of information through search engines; communicate with others through emails, video calls, social media platforms, etc.; and to sell, buy and pay for online things and services available.

3. The software program or specialized website that provide web services and helps search about things or information on the internet. Google, MS Bing and Yahoo are examples of search engines.

4. The web browser helps to visit websites on the internet. Google Chrome, Microsoft Edge and Mozilla Firefox are three web browsers.

**Competency-Based, High Order Thinking Skills Questions**

1. Match the following Examples with their correct Application:

1. c            2. e            3. f            4. a            5. d            6. B

2. Do it yourself

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## Chapter 7 – Logical Skills with RoboMind

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### Exercises

**A. Choose the correct answer.**

1. C            2. A            3. B            4. A            5. D

**B. Fill in the blanks.**

1. frontIsClear    2. frontIsBeacon    3. False            4. True            5. Logical

**C. Answer the following questions.**

1. Click on File > Open Map; In Open dialog box, select the file findSpot1.map and press open button.

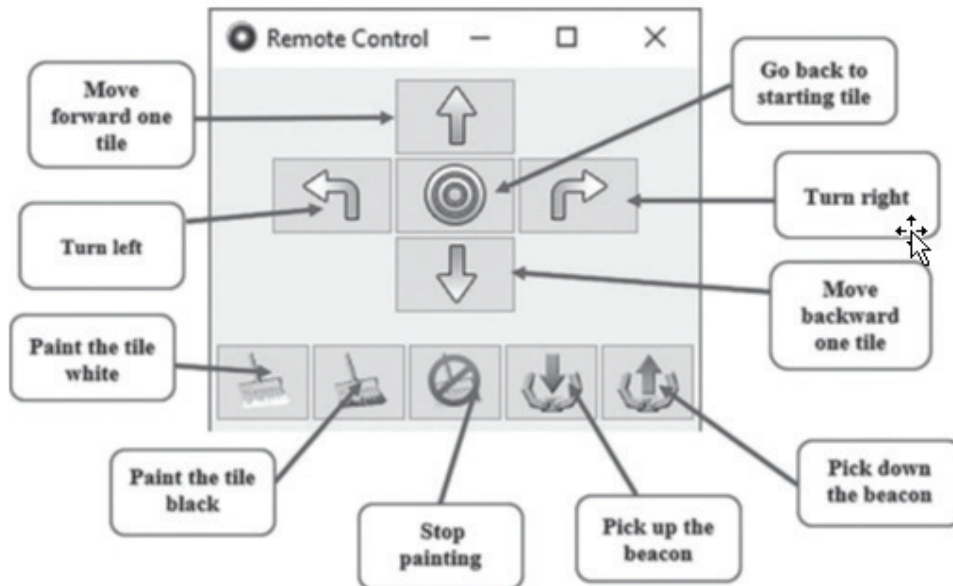
2. Go to File > Open Map and open the file passBeacons1.map, then write the program and click on Run it.

3. Repeat used to move or turn Robo multiple times in a sequence by taking a number within parentheses and instructions inside the block and execute as many times as the number.

- if-else block help in decision making. If block takes the command and execute only if the checked condition is true otherwise else block will execute.

### Competency-Based, High Order Thinking Skills Questions

#### Label the Remote Control.



Give one-line reasons for the following:

- The sequence of instructions is important in a program because it determines the order in which actions are executed, ensuring desired outcomes.
- We need to turn the Robo left or right twice when we want to change its orientation by 180 degrees.
- We need repeat() to efficiently execute a block of code multiple times without duplicating instructions.
- We need to check if the front tile is empty before moving Robo forward to avoid collisions or errors caused by obstacles in its path.

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## Chapter 8 – Block Coding with Scratch

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### Exercises

#### A. Choose the correct answer.

- A
- A
- B
- D
- C

#### B. Fill in the blanks.

- Action, Program
- Condition
- Costumes
- Forever
- Categories

#### C. Mark the following statements as True or False.

- False
- True
- False
- True
- False

#### D. Answer the following questions.

- If-then block contains a slot for putting a condition to check. When the condition gets fulfilled (true) then blocks place in the if block are executed.

- ii. This event block is used to run the attached blocks when start button (Green flag) is clicked.
  - iii. This block changes the costume of the sprite to the selected costume (e.g., cake-b).
  - iv. This is the Start or Go button to run a program. Clicking on this generates “When flag clicked” event.
  - v. This is a loop block that infinitely executes the blocks placed inside it.
2. An event occur due to the user’s action or program. The two event blocks in Scratch are “when green flag clicked” and “when this sprite clicked”.
  3. We call forever block a loop block because it infinitely executes the blocks placed inside it.
  4. To change the costume of the sprite, we use “switch costume to” block. It changes the costume of the sprite to the selected costume (e.g., cake-b).

## Chapter 9 – Coding Skills with Kodu Game Lab

### Exercises

#### A. Choose the correct answer.

1. C                      2. A                      3. C                      4. D                      5. D

#### B. Fill in the blanks.

1. Wander
2. Range, Reload time, Speed
3. Pie
4. +
5. Colour

#### C. Mark the following statements as True or False.

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

#### Competency-Based, High Order Thinking Skills Questions

Give one-line reasons for the following:

1. To identify objects uniquely. Kodu identifies objects on the basis of their colour.
2. To provide players with a sense of purpose and motivation to engage with the game.
3. To ensure that actions occur in the desired order and achieve desired outcomes.
4. We sometimes switch on the Glass Walls setting in a Kodu game to prevent objects from falling off the terrain during gameplay.

### Chapter 1 – MS Word: Planning the Document

#### Exercises

**A. Choose the correct answer.**

1. C                      2. A                      3. D                      4. A                      5. D

**B. Fill in the blanks.**

1. Footer              2. Page setup              3. Sections              4. Portrait              5. Margins

**C. Answer the following questions.**

1. Page size determines the physical dimensions of the document, like its width and height, while page margins set the space between the content and the edges of the page. They help plan how content fits and looks when printed or viewed.
2. Page margins keep the page numbers, headers in the top margins and footers in the bottom margins.
3. The top margin of the page that contains some common content or text is called header. Usually, headers contain titles, company logos, common headings, section headings, etc. The bottom margin of the page that contains footnotes, page numbers, etc. is called footer. Headers and Footers contain repeating content for each page.
4. Raman needs formatting of each chapter distinct. For this, he needs to break each chapter as a new section. Then, each section can be formatted separately.
5. For portrait orientation:

This is a common orientation. When content fits in larger height than width, then portrait orientation is used. For example, text books, magazines, newspapers, etc.

For landscape orientation:

When the content is too large for the page width and less for height then we use portrait orientation. For example, school time table, map of house, diagrams that need wider-angle, wide-angle images.

**Competency-Based, High Order Thinking Skills Questions**

**Investigate the following statements and write down the facts you find.**

1. True – it is possible by selecting Different Odd & Even Pages option while working with Headers and Footers.
2. No, sections can also be inserted continuously on the same page also.
3. No. Orientation decides how the page will be displayed width-wise – landscape or portrait. Dimensions refer to the size of the page.
4. No. Orientation decides how the page will be displayed width-wise – landscape or portrait. Dimensions refer to the size of the page.
5. Yes. A textbox containing some text can be placed anywhere on the page.

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## Chapter 2 – MS Word: More Tools

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### Exercises

**A. Choose the correct answer.**

1. D                      2. C                      3. D                      4. C                      5. A

**B. Fill in the blanks.**

1. Text, Page          2. Ctrl+Z                3. Thesaurus          4. Review                5. Line and Paragraph

**C. Answer the following questions.**

1. The basic difference between copying and moving text is:
- Copying duplicates the text, leaving the original where it is.
  - Moving relocates the text to a new place, removing it from the original.

If Ravi moved text he doesn't need, he should undo the action using "Ctrl + Z" or by finding the "Undo" option. If that's not possible, he can delete the text from its new location.

2. By clicking the Replace button replaces the text one-by-one with the new text given by the user. Whereas by clicking the Replace All button replaces all the text at once.
3. Thesaurus helps enhance the vocabulary used in the document language by suggesting suitable synonyms and antonyms.
4. Line spacing is the vertical space between the lines of text in a paragraph. Whereas paragraph spacing is the space above or below a paragraph.
5. Before clicking "Replace All," Anu should consider using the "exact match" and "whole word" so that letters "the" do not get changed in words like "their", "there", "them", etc.

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## Chapter 3 – PowerPoint: Slide Layouts and Illustration

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### Exercises

**A. Choose the correct answer.**

1. A                      2. B                      3. C                      4. D                      5. D

**B. Fill in the blanks.**

1. Blank                2. Data sheet          3. Hierarchy          4. 3D object            5. Slide layout

**C. Answer the following questions.**

1. Title Slide: It is usually used for the first slide of the presentation.  
Title and Content: It is the default layout that shows the title and content.  
Blank Slide: It is used to cover the whole slide with graphic object that need no further information.  
Title Only: It is used to place only a title on the page rather than a title and sub-title.  
Section Header: It is used to divide the large presentation into multiple sections.



2. For using a table:

Organizing a list of students in your class, showing their names, ages, and favourite subjects. You will use a table to neatly arrange this information in rows and columns, making it easy to read and compare.

For using a chart:

Tracking the sales of different ice cream flavours at an ice cream shop over a month. You will use a chart, like a bar graph or pie chart, to visually represent this data.

3. SmartArt Graphics allows you to communicate information, message or ideas through graphics instead of just using text. To insert SmartArt on the slide, Insert tab> Illustrations group> SmartArt button.

4. The 3 types of illustrations include SmartArt, 3D Models and Icons. 3D Models are used for representing objects that move in 3D space with height, width and depth as third dimension.

Icons are used to communicate visually.

### Competency-Based, High Order Thinking Skills Questions

Consider the scenarios given here and suggest a suitable solution for the task to be done.

1. Title layout
2. Blank slide layout
3. Lata can use SmartArt graphics
4. Ajit can insert a chart on the slide and add his data to show the Column chart.
5. Anwar can find and insert suitable icons for this purpose.

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## Chapter 4 – Begin with MS Excel

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### Exercises

**A. Choose the correct answer.**

1. C                      2. A                      3. D                      4. C                      5. A

**B. Fill in the blanks.**

1. A1:E1                2. Cell Name Box    3. Column                4. Data set                5. C1:C5

**C. Answer the following questions.**

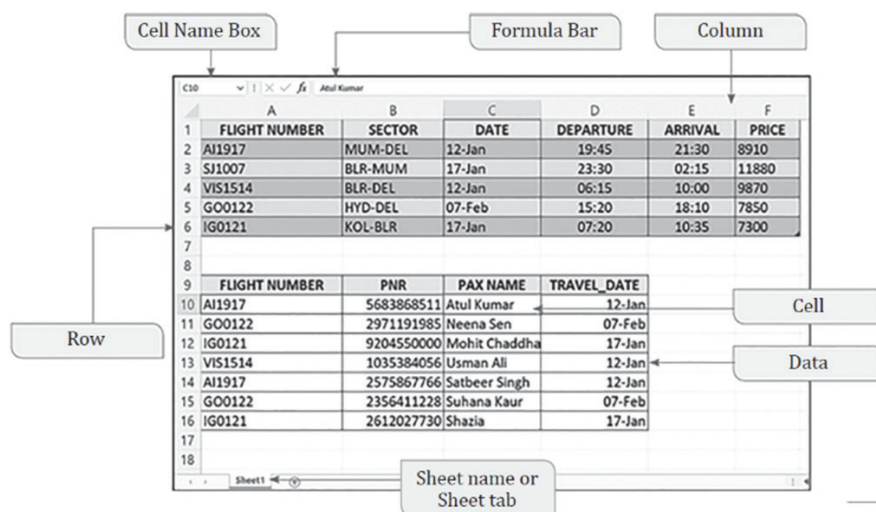
1. The application software that helps us in performing simple to complex calculations of all kinds is called electronic spreadsheet like MS Excel, Google Sheets, etc.
2. In a spreadsheet, a value is stored in a cell. Every cell has a unique address composed of column-row number. Hence, each value is at unique location. For example, value 10 in first column, first row is in cell A1 while another value 10 is in third column-seventh row i.e. C7.
3. A spreadsheet primarily functions as a tool for organizing and manipulating data, featuring rows and columns of information arranged in a grid format. It provides functionalities such as formulas, functions, sorting, filtering, and data analysis tools to manage and analyze data effectively.

A presentation slide is designed to display visual content in a sequential manner to convey information or ideas to an audience. Each slide typically contains images, text, and multimedia elements arranged to create a cohesive narrative or presentation.

- A cell address is a unique location of a cell in a sheet. It includes column alphabet followed by a row number. In Excel sheet, Active cell is identified usually by a green rectangular cell pointer.
- A set of selected adjacent cells is called cell range e.g. A2 to A9 is an example of vertical cell range and A6 to E8 is an example of horizontal cell range. A cell range is written in short with first cell address of the range then last cell address of the range and both are separated by a colon (:), e.g. A6:E8.
- Electronic spreadsheets have built-in functions for automatic calculations without repeating the formula. They can store all the data in a simple tabular form which can be formatted in various styles. They help perform complex data operations, like filtering, sorting, formatting, calculating, etc. Spreadsheets contain charts and graphs that help understand and analyze the data easily and in better decision-making.

### Visual Identification

Label the following image:



### Competency-Based, High Order Thinking Skills Questions

Investigate the following statements and write down the facts you find.

- Electronic spreadsheet displays the data in the form of tabular layout arranged as columns and rows. The data can be text, numbers, dates, etc.
- Charts present the data in pictorial form which is easier to understand by human brain.
- Sharing sheet online is beneficial because only one copy is maintained among multiple users.
- Yes. Applying common formatting styles is mostly like in MS Word and MS PowerPoint.
- No. Cell range refers to the data we select or when we specify starting and ending cell address with colon. E.g., A1:D5.

## Chapter 5 – MS Excel: Basic Working with Data

### Exercises

A. Choose the correct answer.

- D
- D
- D
- B
- B

**B. Fill in the blanks.**

1. Active
2. Fill handle, Custom List
3. Redo
4. Manually, Automatically
5. Select

**C. Answer the following questions.**

1. After selecting the data, drag the mouse while pressing the Ctrl key, the copy of the selected data will be created. Or, Select the data > Home > Copy. Then, go to the destination cell > Home > Paste or Press Enter key to Paste.
2. Custom list is of great significance when used with the AutoFill feature as typing each time is not required. You just need to add the list using the Edit Custom Lists option. E.g. You can create a list of cities, departments, names, numbers, subjects, etc.
3. i. Select a column or row > Home tab > Cells group > Insert/Delete button. A drop-down menu appears, select Insert or Delete option.  
ii. Right click on the cell, a drop-down menu appears. Click on the Insert/Delete option. The Insert/Delete dialog box appears. Select the relevant option to insert or delete a row or column.
4. i. By using mouse: Put mouse cursor on the border of the column/row (header). The cursor changes to double headed arrow. Now, click and drag the border of column /row (header) to increase or decrease the column width /row height. Once done, release the mouse button.  
ii. By using the command on the Ribbon: Select the rows or column header then > Home tab > Cells group > Format button. A drop-down menu appears. Click on AutoFit Column Width/ Row Height option. Column Width/Row Height dialog box appears. Type the required width/ height and click on OK. The size of the selected column/row is changed.
5. 1. **File** tab > **More** > **Options** > In the **Excel Options** dialog box, **Advanced** section.  
2. In the right pane, scroll down to **General** section and click on **Edit Custom Lists** button. The **Custom Lists** dialog box appears.  
3. In the **List entries** box, type the names of the departments.  
4. Click on **Add** button. The entered list appears in the Custom lists box.  
5. Click on **OK** buttons of both the dialog boxes one-by-one.

**Competency-Based, High Order Thinking Skills Questions**

**Investigate the following statements and write down the facts you find.**

1. No. Excel adjusts the remaining rows together.
2. No. Zero width column means it is hidden.
3. False. We can use mouse to copy the selected data by dragging while Ctrl key is pressed.
4. True.
5. Yes. And, also for the selected range.

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## Chapter 6 – Computers: Invention to Advancements

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### Exercises

**A. Choose the correct answer.**

1. C                      2. A                      3. C                      4. D                      5. B

**B. Fill in the blanks.**

1. First, Second
2. Integrated circuits
3. Logarithms, Decimal point
4. Analytical engine
5. VLSI

**C. Answer the following questions.**

1. Artificial Intelligence is used in smart devices for facial recognition, object identification, to interact in natural human language, perform useful prediction, detect frauds, analyse sentiments of people about products and public figures, autonomous vehicles, drones, robots, etc.
2. The first, second and third generations of computers include middle age computing.
  - i. a. First Generation of Computers like UNIVAC and ENIAC were used between the years 1946 and 1959.
    - b. These computers used vacuum tubes and were expensive, consumed too much electricity and generated huge amount of heat.
  - ii. a. Second Generation of Computers like IBM 1401, Honeywell 400, etc. were used between the years 1959 and 1965.
    - b. These computers used transistors and were smaller, faster, cheaper, more energy-efficient and reliable than the previous generation computers.
  - iii. a. Third Generation of Computers like PDP-8, IBM 360, etc. were used between the years 1965 and 1971.
    - b. These computers used Integrated Circuits and were smaller, faster, and cheaper than its predecessors.
3. The term VLSI is an acronym for Very Large Scale Integration, which was used in 1970 for modern age computers, where thousands of transistors were integrated into a single small chip. As a result, semiconductor and telecommunication technologies developed. The Fourth Generation of Computers like IBM-PC, Apple Macintosh, etc. were used between 1971 and 1980. It had single VLSI microprocessor that had huge data storage were faster, smaller and cheaper.
4. Early computing devices include Pascaline and Analytical Engine. Pascaline was a device invented by Blaise Pascal in 1642 that had turn-able discs. These discs were used for setting numbers after turning the handle for calculating addition and subtraction. Analytical Engine was invented by Charles Babbage—the father of modern computing in 1833. It was first fully automatic machine capable of doing complex calculations.
5. First Generation of Computers were as big as a room and had no keyboard. Second Generation of Computers used Assembly language for processing. Third Generation of Computers were single user, single tasking operating system such as DOS.

6. Two features of Mainframe computers are:
  - i. It has large memory capacity.
  - ii. It allows networking of up to 100 terminals.

Two drawbacks of Mainframe computers are:

- i. It requires experts and highly qualified professional to operate.
- ii. Sophisticated technology is required for manufacturing and assembling the computers.

### Competency-Based, High Order Thinking Skills Questions

Number the following events in correct sequence of their occurrence.

- |  |    |
|--|----|
| 1. PDP-1 was released with transistor-based circuits.                            | 7  |
| 2. John Napier invents device with multiplication tables.                        | 2  |
| 3. Apple unveiled Macintosh with VLSI microprocessor.                            | 9  |
| 4. Father of modern computing invents first fully-automatic calculating machine. | 4  |
| 5. Chinese invent calculating tray.  | 1  |
| 6. IBM released IBM 701 with Vacuum tubes.                                       | 6  |
| 7. Herman started IBM with two partners.   | 5  |
| 8. IBM 360 was launched with integrated circuit.                                 | 8  |
| 9. Pascal invents device with turnable discs.                                    | 3  |
| 10. Humanoid Sophia equipped with AI, launched in Feb 2016.                      | 10 |

## Chapter 7 – Internet Browsing

### Exercises

#### A. Choose the correct answer.

1. B                      2. C                      3. D                      4. C                      5. B

#### B. Fill in the blanks.

1. Edge                  2. Tabs                  3. Incognito            4. Meta                  5. Livemail

#### C. Answer the following questions.

1. Web browser is the software used in order to gain access to the services on the internet. Some of its features include:
  - i. Some browsers like MS Internet Explorer, MS Edge, etc. come with the operating system.
  - ii. Some browsers like Google Chrome, Firefox, Opera, etc. can be downloaded for free from the internet.
  - iii. The browser window can open multiple websites in separate tabs.
  - iv. The browser has menu options that help the user to perform common operations like view history of a webpage, zoom a web page in and out, print a web page, etc.
  - v. The New Incognito Window option in the browser opens a new browser window to browse the internet secretly and unknown without maintaining any visit of web history.
2. History in a web browser helps to locate a previously visited web page and records all the visited URLs. While Bookmarks store URLs that a user frequently like to visit in a web browser.

- The name or the short description that we type for searching something on the internet using a search engine is called a search string. We use a search string in the search bar of the search engine.
- Some common internet services include online free learning, searching locations and routes, online shopping, news and information and social media.

**Online Free Learning:** Many websites like mooc.org provides free courses on a variety of subjects on internet. Some useful websites like Google Digital Garage provide courses on technologies for working professionals and freshers with industry-acknowledged certificates.

**Searching Locations and Routes:** Google Maps help search routes and paths across the world. When the source and destination are mentioned on it displays an intuitive interface to help navigate the path supported by voice-based guidance for directions.

### Competency-Based, High Order Thinking Skills Questions

Identify the web service and match it with its correct function.

1. d                      2. b                      3. e                      4. f                      5. a                      6. c

## Chapter 8 – Scratch: Simple Events, Music, Variables & Control

### Exercises

#### A. Choose the correct answer.

1. D                      2. D                      3. D                      4. B                      5. C

#### B. Fill in the blanks.

- Programming
- Event handling
- Operator
- Beats
- Events

#### C. In one line, describe the following keywords.

- if refers to check a condition. If the condition is true then run the set of instructions.
- else part executes a set of instructions when the condition with if is false.
- forever is a loop in which instructions run infinitely.
- wait is used to pause the running program for specified duration.
- ask is used to take input from the user by giving a prompt like “Enter a number”.

#### D. Answer the following questions.

- Handles the event raised on clicking the sprite with mouse.
- Stores the input entered by the user.
- Joins the two strings together.
- Compare block – “greater than”. Compares if one value is greater than the other.
- Used to check a condition, if it is true – runs a set of blocks. If condition is false, runs the set of blocks in “else” part.

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## Chapter 9 – Animation Basics with TupiTube

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### Exercises

#### A. Choose the correct answer.

1. C                      2. D                      3. D                      4. A                      5. B

#### B. Label the Following image.

Side Panel,              Tabs Standard Toolbar,              Exposure Sheet,              Shape,              Stage  
Toolbox,              Properties Panel,              Stage Toolbar

#### C. Answer the following questions.

- A series of drawings passed at a very high speed before eyes give the illusion of animation.
  - Frame is one piece of drawing in entire animation.
  - Tweening automatically generates further frames for animation.
  - A collection of objects such as images etc. useful for any animation project is called Library.
  - MP4 is the latest multimedia video file format.
- Four tweening effects in TupiTube are Motion, Rotation, Scale, Coloring. (Other 2 are Shear and Opacity).
- To slow down the animation speed, we reduce the number of frames in the Preview.

#### D. Fill in the blanks.

1. Stage              2. Animation              3. .tup, MP4              4. Frames              5. Player

### Competency-Based, High Order Thinking Skills Questions

#### Investigate the following statements and write down the facts you find.

- False. Tweening is faster because it automatically generates required frames.
- True, usually, a story is made of multiple scenes.
- True. Tweening means change in position, shape, colour, etc. of an object.
- False. Jpg and png are image file formats.

#### Identify and Match.

#### Number the function of the tool as marked on the Toolbox.

All tools are numbered correctly in fact.

To draw shapes – 1

To select and move objects – 2

To fill colour in the shape – 3

To apply tweenings – 4



### Chapter 1 – MS Word: Tables and Graphics

#### Exercises

**A. Choose the correct answer.**

1. A                      2. C                      3. D                      4. C                      5. C

**B. Fill in the blanks.**

1. Illustration    2. Gradient    3. Shapes, Images    4. Cropping    5. Diagonally

**C. Answer the following questions.**

1. Rotate: Click on the image > go to “Picture Format” or “Format” tab > click “Rotate,” and choose rotation option.

**Resize:** Click on the image > Hover over one of the corner handles > drag the corners to make it bigger or smaller as needed > Release the mouse button.

**Crop:** Click on the image > go to Format tab > Size group > crop option

2. To make a shape look better, first, choose it. Then, change its colors, size, and outline. Make sure it fits well with other things on the page. You can also add shadows or reflections to make it more interesting to look at.

3.

- i. Open Microsoft Word.
- ii. Click “Insert,” then “Table,” and choose a 3x6 table.
- iii. Write “Fruit” in the first cell, “Quantity” in the second cell, and “Price” in the third cell of the first row.
- iv. Below “Fruit,” list the names of five fruits in the first column.
- v. In the second column, write the quantity of each fruit.
- vi. In the third column, write the price of each fruit.

4.

- i. Click to select the four cells.
- ii. Go to the “Layout” or “Table Tools” tab.
- iii. Find the “Merge Cells” option and click on it to merge the selected cells into one.
- iv. Once merged, right-click on the merged cell and choose “Split Cells.”
- v. In the “Split Cells” dialog box, specify “3” columns and “1” row, then click “OK.”

5. Icons are tiny images like clipart.

3D objects are web-based shapes that can be viewed from any angle.

WordArt is artistic text that appears as independent object on the page.

Shapes are geometric figures like rectangles, circles, arrows, etc., used to illustrate concepts or organize content visually.

Images are visual representations such as photographs or illustrations used to enhance the content of a document.



## Competency-Based, High Order Thinking Skills Questions

- A. Tick the correct column which is applicable for each set of Assertion (A) and Reason (R).
- Both A and R are incorrect.
  - Both A and R are correct but R is the correct reason of A
  - Both A and R are correct but R is not the correct reason of A
  - Both A and R are correct but R is not the correct reason of A
  - Both A and R correct and R is the correct reason of A
- B. Pressing the Tab key in the first cell of a MS Word table moves the cursor to the next cell in the same row. If the cursor is in the last cell, pressing Tab adds a new row below the table and moves the cursor to the first cell of that new row.
- C. 1. False                      2. False                      3. True                      4. False  
5. True                      6. True                      7. True                      8. False

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## Chapter 2 – MS PowerPoint: Multimedia

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### Exercises

**A. Choose the correct answer.**

1. C                      2. D                      3. B                      4. D                      5. A

**B. Fill in the blanks.**

1. Media                      2. Trimming                      3. One                      4. Copyright                      5. Audio

**C. Answer the following questions.**

- Audio and video enhance presentations by increasing engagement, adding visual appeal, demonstrating concepts, and improving accessibility. These make presentations more dynamic, memorable, and effective in conveying information to the audience.
- Screen Recording helps to record the video of what you do on the computer screen – where you clicked or typed something or opened a window.
- Loop until Stopped: Check this box if you need the clip to run non-stop repeatedly.  
**Hide During Show:** Check this box to hide the audio clip icon during the slide show.  
**Start Setting:** Choose how the audio or video clip begins playing during the presentation.
- To insert media clips, go to the Insert tab > Click Video or Audio > Select your file.  
To trim media clips, click on the clip > Go to the Playback tab > Click Trim > Adjust the start and end points > Click OK.
- Play Across Slides allows continuous playback of media across multiple slides.  
Play Full Screen maximizes media visibility by displaying it in full-screen mode during the presentation.

## Competency-Based, High Order Thinking Skills Questions

**A. Tick the correct column which is applicable for each set of Assertion (A) and Reason (R).**

- Both A and R are correct and R is the correct reason of A
- Both A and R are correct and R is the correct reason of A
- Both A and R are correct but R is not the correct reason of A

4. Both A and R are correct and R is the correct reason of A
5. Both A and R are correct but R is not the correct reason of A

**B. Suggest the suitable media options for the following scenarios**

1. Volume
2. Play in background
3. Play across slide
4. Hide while not playing
5. Play Full screen

## Chapter 3 – Advanced PowerPoint: Slide Transitions, Animations, Action Buttons

### Exercises

**A. Choose the correct answer.**

1. B                      2. A                      3. C                      4. C                      5. D

**B. Fill in the blanks.**

1. Action buttons      2. Record              3. Rehearse Timings      4. Show, Setup Show

**C. Answer the following questions.**

1. The effect with which a slide changes on the screen is called slide transition. Various types of transitions are Subtle – Fade effect, Exciting – Ripple effect and Dynamic Content – Rotate effect.
2. The effect with which an object appears on the slide, exits the slide or changes its appearance is called animation. The types of animation are Entrance – Fly in effect, Emphasis – Fill color effect, and Exit – Fly out effect. There is also Motion Path animation (Loop effect). Higher versions of PowerPoint also contain 3D animation effects like Jump.
3. While setting up a slide show, we can decide if the presentation will run by the presenter or like an automatic kiosk, animation can be run continuously until Escape key is pressed and either all or selective slides can be run.
4. Slide transition refers to the effect that occurs when moving from one slide to another. It determines how the transition between slides looks.

Animation refers to movement or changes that occur within a slide. It is used to make individual elements on a slide (such as text, images, or shapes) move, appear, disappear, or change during the presentation.

5. Action buttons are the objects which can be clicked during the slide show to navigate to other slides, to open another presentation, to open another program or to end a slide show etc.

**Competency-Based, High Order Thinking Skills Questions**

**A. Read the following problems and suggest the suitable solution.**

1. Aman should apply an Exit type of animation effect (Fly out) and for this effect he should select the first circle as trigger in Animation settings.
2. Mona should select the duration of 5 seconds in Transition tab and in Settings, she should click on the button Apply to all slides.
3. Raman must apply Fly in (Entrance) animation effect on the rectangle, then an Emphasis effect (Fill color for red) and then Exit animation (Fly out). Then, he must apply “Start

After Previous” options on the Emphasis and Exit animations.

4. Shaista should add an action button with the action – “End Show”.
5. Gurmeet should rehearse the presentation in Slideshow tab to record the timings and in Slideshow settings he must ensure that “Loop continuously until Esc” option is selected.

**B. Match the transition and animation effects with their correct types:**

1. G      2. E      3. C      4. B      5. F      6. A      7. H      8. D

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## Chapter 4 – MS Excel: Basic Data Operations

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### Exercises

**A. Choose the correct answer.**

1. B                      2. C                      3. B                      4. C                      5. A

**B. Fill in the blanks.**

1. First                  2. Order                  3. Filter                  4. Field                  5. 2

**C. Answer the following questions.**

1. Sorting is used to arrange the data in ascending or descending order.  
Filtering is used to separate the data from the whole data set.  
Conditional formatting is used to specify the cell formatting which should be applied if cell contains specific value.
2. To filter the rows of all the ‘Female’ persons in the city ‘Kolkata’, you can follow these steps:
  - a. Open the dataset containing the information of all persons.
  - b. Locate the filter option in your spreadsheet software (such as Excel) and apply a filter to the column containing gender.
  - c. Within the filter options, select ‘Female’ to display only rows where the gender column contains the value ‘Female’.
  - d. Once the filter for gender is applied, locate the filter option for the city column and apply a filter to it.
  - e. Within the filter options for the city column, select ‘Kolkata’ to display only rows where the city column contains the value ‘Kolkata’.
  - f. After applying both filters, you will see only the rows of ‘Female’ persons in the city ‘Kolkata’.
3. In Subtotal dialog box:
  - i. Select the field on whose change subtotal has to be taken, in At each change in list.
  - ii. Select the suitable function in Use functions list.
  - iii. Select the field whose subtotal is to be done in Add Subtotal to field list.
4. The quickest way to sort data on the first column is to:
  - a. Click on any cell within the first column (Column A).
  - b. Then, go to the “Data” tab in the Excel menu.
  - c. Click on the “Sort A to Z” or “Sort Z to A” button in the “Sort & Filter” group, depending on whether you want to sort in ascending or descending order.

5. Filter feature provides many options to filter the data on the basis of number values such as Greater than, Less than, Between, Top, Not equal to, etc.

On the basis of text, data can be filtered such as Ends with, begins with, Contains, etc.

### Competency-Based, High Order Thinking Skills Questions

Consider the following scenarios and suggest the best suited solution to the problem.

1. Naveen must sort the data in the descending order of age.
2. Mukta should sort the data on the basis of classes (ascending order). Then she should apply Subtotal feature on the selected data as:

At each change in: Class

Use function: Average

Add subtotal to: Marks

3. Atul should apply Number filter on the age with criteria: between 18 and 30 years.

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## Chapter 5 – Online Communication

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### Exercises

#### A. Choose the correct answer.

1. D
2. B
3. D
4. D
5. A

#### B. Fill in the blanks.

1. Draft
2. Emotions, Stickers
3. Attachment
4. Trash
5. Double tick, Double blue tick

#### C. Correct the flow of email messages in the following:

1. Go to Drafts folder. 4\*
2. Reply the email message. 9 (at recipient's end)
3. Compose the email message. 1
4. Click on attachment and attach files. 2\*
5. Save the email message to be sent later. 3
6. Download attachment. 8 (at recipient's end)
7. Reopen the email message. 5\*
8. Click on the email message to read it. 7. (at recipient's end)
9. Send the email message. 6

\*Note – Attachment can be done (2) after reopening the mail (5) in draft folder (4).

#### D. Answer the following questions.

1. Emails are free, fast, efficient, and easy to use as well as files can be sent as an attachment.
2. A sender can use the Drafts folder to save an email message to send it later. Deleted emails are kept in the Trash bin and received emails are stored in the Inbox.
3. Blogging is a process of writing creative content or articles or sharing ideas, interest, photos, etc. for a website. Video conferencing is a medium through which online interactive meetings are conducted through various tools like MS Skype, Zoom, etc.

4. An email message contains To field names the main recipient's address, the CC field to include the Carbon Copy to email addresses of other recipients who are part of the communication and the BCC field includes Blind Carbon Copy to email addresses of the recipients who cannot see other recipients of the message.
5. Social Media platforms like Twitter allow public figures to connect with fans, followers, and admirers easily and instantly. It is an effective medium to raise voices for social causes. Some misgivings of social media platforms include hate speech, fake news, cyberbullying, online stalking, online fraud, etc.
6. Instant messaging services have the following 4 features—service mode, media sharing, chat rooms/groups and emoticons, and formatting. Service mode provides chat features is available in the form of chat applications like WhatsApp or Messenger built-in web services of Facebook. Text messages can be usually enhanced with the use of emojis, animated gifs, and stickers. Simple formatting can be applied to the text using markdown feature.

## Chapter 6 – Build Webpages Using HTML

### Exercises

#### A. Choose the correct answer.

1. B                      2. C                      3. B                      4. B                      5. C

#### B. Fill in the blanks.

1. WWW                2. Closing                3. HTML                4. Reverse                5. PRE

#### C. Answer the following questions.

1. Basic formatting elements include BOLD, ITALICS, UNDERLINE, SUPERSCRIP, and SUBSCRIPT. BOLD changes the enclosed text bold e.g., `<B>Hello</B>`. ITALICS italicizes the enclosed text e.g., `<I>Hello</I>`. UNDERLINE underlines the enclosed text e.g., `<U>Hello</U>`. SUPERSCRIP displays text in superscript e.g., `x<SUP>2</SUP>`. SUBSCRIPT displays text in subscript e.g., `x<SUB>2</SUB>`.
2. HTML element has the beginning and the end of the HTML document, HEAD contains the title of the browser's window, any scripts and stylesheets. BODY contains the actual web page content and related markup. If you do not close a container element then the effect of the start tag will continue further. E.g. `<B><I>Hello</B>All</I>` - Here "Hello" will be bold and italics while "All" will be only italics because effect of `<B>` is closed by `</B>` before "All" but effect of `<I>` continues up to "All".
3. Markup is a way to mark the content of the web page as it should be displayed in a browser. HTML means Hypertext Markup Language to tell a browser what the text should look like.
4. HTML element marks the beginning and the end of the HTML document. An element is denoted by a single tag or a set of tags. Empty elements do not have a matching end tag since they do not enclose the content within e.g., line break or break `<BR>`. Whereas Container elements have a start tag and a matching end tag since they enclose the content within e.g., `<BODY>` and `</BODY>`.
5. If you do not close a container element then the effect of the start tag will continue further. E.g. `<B><I>Hello</B>All</I>` - Here "Hello" will be bold and italics while "All" will be only italics because effect of `<B>` is closed by `</B>` before "All" but effect of `<I>` continues up to "All".

#### Competency-Based, High Order Thinking Skills Questions

Investigate the following statements and write down the facts you find.

1. False. Many hyperlinked webpages make a website.
2. True.
3. True.
4. False. Head block appears before Body block.
5. True. For line breaks, we use <BR> tag.

## Chapter 7 – HTML Attributes and Text Formatting

### Exercises

#### A. Choose the correct answer.

1. A                      2. C                      3. C                      4. A                      5. A

#### B. Fill in the blanks.

1. Entity                2. Size                      3. &lt;                      4. Face                      5. &nbsp;

#### C. Answer the following questions.

1. To display symbols in HTML, you can use special codes called character entity references. Here are four examples:
  - a. &copy; - This shows the copyright symbol: ©
  - b. &amp; - This shows the ampersand symbol: &
  - c. &lt; - This shows the less-than symbol: <
  - d. &gt; - This shows the greater-than symbol: >

2. HTML comments are a way to describe the content of the web page. They appear in the HTML code but are not displayed to the user in the output. The comments are enclosed within <!--and-->. <!-- This is a comment explaining the purpose of the following section -->

<section id="about">

In the above example, the comment <!-- This is a comment explaining the purpose of the following section --> provides additional information about the purpose of the <section> element.

3. <h1 color=red align=right>This is the largest heading in red and right-aligned</h1>
4. Attributes in HTML are applied on the tag to give it additional look, information, or behaviour. They are placed within the opening tag and consist of a name and a value separated by an equal sign.  
E.g. 
5. The attribute BgColor takes a colour name or code to set the background colour of the webpage. While background attribute displays an image in the background. If both bgcolor and background attributes are used in BODY element then background attribute overrides the effect of bgcolor.

#### Competency-Based, High Order Thinking Skills Questions

**Do you agree with the following statements? Specify reason for your response.**

1. Agree. The effect of attributes starts from the opening tag of the element. Closing tags stop the effect of the attributes.
2. Disagree. As the name of the attribute suggests – bgcolor means background colour, not the image.

For background image there is the attribute "Background".

3. Agree. <P> breaks a paragraph clearly.
4. Disagree. Maximum size the font element supports is 7.
5. Comments are useful for developers and learners for documentation purpose in the HTML code. They are not useful for website visitor so they are not displayed by the browser.

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## Chapter 8 – Scratch Programming

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### Exercises

#### A. Choose the correct answer.

1. D            2. C            3. D            4. b (replace input by answer)            5. C

#### B. Fill in the blanks.

1. Events            2. Else            3. answer            4. Backdrop            5. Control

#### C. Answer the following questions.

1. if-else block is used in decision-making. When if condition is true then the blocks in if part are executed otherwise the blocks in “else” part execute.
2. “repeat” block executes the enclosed blocks as many times as the number mentioned in its value section while “repeat until” block executes loops as long as the given condition becomes true.
3. A variable stores values in a program such as user input or calculations. To create a variable named Age in Scratch.
  - Scripts tab > Variables category > Make a Variable button.
  - In the dialog box, enter the name of the variable as Age and click on OK.
4. ‘Broadcast’ and ‘when I receive \_\_\_\_’ blocks help two sprites talk to each other.
5. An event is any action performed by user or program. Names of four events in Scratch are “When green flag clicked”, “when key pressed”, “when this sprite clicked” and “when I receive message”.

#### D. Match the following blocks with their correct functions.

1. D            2. B            3. E            4. A            5. C

#### Competency-Based, High Order Thinking Skills Questions

- A. Investigate the following statements and write down the facts you find.
1. No. Broadcast block send message to all the sprites in the program.
  2. True. A variable holds one value at a time.
  3. False. Deleting a clone has no effect on the original sprite.
  4. True. = compares equality, > and < compare greater than and less then respectively.
  5. True. Forever is an infinite block which can trap the program control forever.
- B. Try out these codes and note down your observations:  
Students will do themselves



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## Chapter 9 – Programming Languages

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### Exercises

#### A. Choose the correct answer.

1. D            2. C            3. D            4. B            5. B

#### B. Fill in the blanks.

1. Modules            2. Not            3. Fourth            4. SQL            5. Event

#### C. Answer the following questions.

1. Arithmetic operators are used to do basic mathematical operation. They are used for addition, subtraction, multiplication and division, etc. E.g.,  $a + b$ . Whereas, logical operators are used to check multiple conditions. So, logical operators like AND, OR, and NOT are used with control statements. E.g.,  $((5 > 4) \text{ AND } (3 == 5))$  evaluates to false (true AND false = false).
2. Pseudocode is an artificial code in an informal language to understand the program flow that helps the programmers to write computer programs. Pseudocode to find the perimeter of a rectangle.

Begin

Accept l, b

Perimeter =  $2(l + b)$

Display Perimeter

End

3. Compiler translates the whole high level language program at once into machine language. It generates a list of errors or object code (if no errors are found) for the program. While Interpreter translates a high-level language program into machine language line-by-line and repeats the procedure. It stops when it encounters error.
4. First Generation Computer Language is the machine language expressed in binary digits i.e. '0' and '1' that a computer can understand.

Second Generation Computer Language uses assembly language with mnemonic codes.

Assemblers or translator programs translated assembly language to machine language program.

Third Generation Computer Languages are High Level Languages which are machine independent, simple and user-friendly e.g., Java, Python, etc.

Fourth Generation Computer Languages include modern languages that are highly user-friendly and are executed at very high speed e.g., SQL, Panther, etc.

5. Second Generation Language includes the assembly language that uses mnemonic codes which were not easily understood by humans. So, Assemblers or translator programs were used to translate assembly language to machine language program. Third Generation Languages are High Level Languages which are comparatively simple, machine independent and user-friendly e.g., Java, Python, etc.

#### Competency-Based, High Order Thinking Skills Questions

Identify the following statements as true or false. Find out the true fact about the false statements.

1. False. Pseudocode is an artificial program not written in any programming language.
2. True. (NOT operator reverses the condition.)
3. True



4. False. Compiler does not generate object code until all the errors are fixed.
5. True. (Machine language is understood by the computer.)

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## Chapter 10 – Handshake with Python

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### Exercises

#### A. Choose the correct answer.

1. C            2. C            3. A            4. D            5. D

#### B. Fill in the blanks.

1. Python Shell
2. Artificial Intelligence
3. .py
4. Interpreter
5. Distribute, Use

#### C. Answer the following questions.

1. Python is a beginner-friendly programming language. So, student do not need to know any programming language before learning Python. Today, learning Python gives advantage in making a good career as a programmer, data scientist, machine learning programmer, etc.
2. Library is a collection of pre-designed utilities and programs that can be picked and used in our programs. Portable is a program that can run on a variety of devices and operating systems. Open-source is usually used for software that is free to use, modify and distribute.
3. Python Command mode is an interface to run or execute a single statement in Python Shell. Whereas, the Script mode is an interface to allow the user to create executable scripts (set of instructions). Interactive mode commands cannot be saved while in script mode, the scripts are saved in .py files.
4. Python is used in many areas like game development, artificial intelligence, healthcare, web development and finance.
5.
  - i. Python is easier to understand, learn and write the code as it has an English-like syntax and fewer lines of code to perform.
  - ii. Python is freely available under open-source license so that you can use it, download it, modify it and distribute it as your version.
  - iii. Python has a vast standard library support from where students can take the needed help for coding and programming.
  - iv. The portability of Python helps the students to write the coding once and run the program on different platforms anywhere.
  - v. Python automatically assigns the data types during execution and dynamically types the variables.

#### Competency-Based, High Order Thinking Skills Questions

##### Match the terms with their correct explanation.

1. D            2. C            3. E            4. B            5. A            6. F

## Chapter 1 – E-Commerce and Social Media

## Exercises

## A. Choose the correct answer.

1. A                      2. B                      3. D                      4. C                      5. C

## B. Fill in the blanks.

1. Auctions, Classified
2. OTP
3. Shopping cart
4. Blog
5. Cyberbullying

## C. Answer the following questions.

1. The process of selling and purchasing goods and services online is called E-commerce. Its categories are Business to consumer (B2C), Business to business (B2B), Consumer to business (C2B), and Consumer to consumer (C2C).
2. The 2 advantages of E-Commerce to consumers are – i. It enables us to do shopping anytime from anywhere. ii. Relevant and detailed information can be seen instantly about the products.  
The 2 non-technical disadvantages of E-Commerce are –  
i. The shipping time can be longer, ii. The product may vary, short delivered or damaged.
3. Social media is that part of cyberworld that helps us in connecting with people for social communication. It simulates a real, physical network however, it is just that the network is online. We can use social media applications on computers, mobiles, and tablets. WhatsApp, Facebook, Instagram, Twitter, and LinkedIn are the major applications of social media.  
On blogs, we can share our ideas with others and people can comment on the blog postings. They can also share them with others online. This way, blog becomes the part of social media.
4. **i. Net banking:** Process of doing financial transactions (payment, money transfer, etc.) online through our bank website.  
**ii. Blogging:** Sharing ideas and information using a personalised website is called blogging.  
**iii. E-Governance:** Government's mode to provide access to public schemes and addresses public issues online.  
**iv. Social networking:** Connecting with people online over a social media website, sharing ideas and information with them.
5. Bullying that takes place on social media platforms is known as cyberbullying. Many people use false social media accounts to harass others by sending them derogatory photographs and videos and mocking them with unpleasant remarks (social status shaming, body shaming, racial remarks, etc.) Cyberbullying primarily affects teenagers and children. The ill effects are loss of self-dignity, low-confidence, anxiety and suicide in extreme cases. Children may also get encourage to cyberbully others.

## D. Match the terms in Column 1 with Column 2.

1. C                      2. E                      3. B                      4. A                      5. D

## Competency-Based, High Order Thinking Skills Questions.

Consider the following scenarios and suggest the best suited solution to the problem.

1. To handle negative feedback on social media, a business should respond promptly, apologize if necessary, and offer solutions to resolve issues. Monitoring social media channels regularly and preventing similar problems in the future is important.
2. For security in an online store, use SSL encryption, choose a secure payment gateway, and follow data protection regulations. Implement multi-factor authentication, update software regularly, and educate staff and customers about security practices.

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## Chapter 2 – Mail Merge with MS Word

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### Exercises

#### A. Choose the correct answer.

1. A                      2. C                      3. D                      4. C                      5. B

#### B. Fill in the blanks.

1. Main document, Data source
2. Current cursor position
3. Age greater than 40
4. Fields
5. Mailings

#### C. Answer the following questions.

1. Mail merge feature allows us to generate copies of a document for multiple recipients. This saves time and effort in creating document for each individual manually. The common document to be sent to the recipient only contains the variable information that comes from a data source.
2. The documents involved in the mail merge process are:

**Main document:** This is the document or letter that contains the common information for all the recipients. The merged fields are inserted in this.

**Data source:** This document contains the details to be inserted in the main document for each recipient. The values in it are identified by unique field names called merged fields. E.g. Name, Address, Phone, City, etc.

**Merged document:** These are the final documents generated for each recipient after merging required data in to the main document from data source.

3. Data source stores the varying data values which need to be inserted into the main document at right insertion points. E.g. Name, Address, City, Pin code etc.
4. During the mail merge process, after selecting the data source, in Mail Merge Recipients dialog box, click on Filter option. In Filter and Sort dialog box,

	<b>Field</b>	<b>Comparison</b>	<b>Compare to</b>
	City	Equal to	Lucknow
OR	City	Equal to	Agra
AND	State	Equal to	UP

Then, click OK

## Competency-Based, High Order Thinking Skills Questions

For False statements, specify the correct fact.

1. False – a mailing list will be used as data source.
2. True
3. True
4. False – Preview results option displays all the records which can be seen by scrolling.
5. False – merged fields are not document. The two documents are main document and data source.

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## Chapter 3 – Data Visualization in Excel

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### Exercises

#### A. Choose the correct answer.

1. C                      2. D                      3. A                      4. B                      5. C

#### B. Fill in the blanks.

1. Analysing
2. Data points
3. Measure, Categorise
4. Y axis
5. Legend

#### C. Answer the following questions.

1. A huge dataset is hard to analyze because there is a lot of information to deal with. It can make computers slow down and it is hard to figure out what is important. To make it easier, break the dataset into smaller parts to show the information, use graphs to visualize it. These things help manage the data better and understand it more easily.
2. For Abhishek to see the percentage distribution of his company sales in 5 cities, a pie chart would be the most suitable option. A pie chart visually represents proportions or percentages of a whole by dividing a circle into sectors, with each sector representing a proportion of the total.

#### 3. Pie Chart:

- a. Budget: Shows how money is divided between different categories, like groceries, rent, and entertainment.
- b. Market Share: Demonstrates the portion of the market controlled by different companies, like TATA, Birla, and Honda.

#### Column Chart:

- a. Sales Comparison: Helps compare sales of different products, like smartphones or laptops, in a specific period.
- b. Survey Results: Displays responses to survey questions, like favorite colors or preferred vacation destinations, in a clear, visual manner.

#### Line Chart:

- a. Trend Analysis: Tracks changes over time, like temperature throughout the year or stock prices over months.

- b. Performance Tracking: Shows how variables change over time, such as monthly website visitors or daily temperature readings.
- 4. Data visualization means turning data into pictures or graphs to make it easier to understand. It is different from ordinary data because it presents information visually, like with charts or maps, instead of just numbers and words in tables. This makes it easier to explore, analyze, and understand the data.
- 5. Charts have many benefits:
  - a. Visual Representation: They show data visually, making complex information easier to understand.
  - b. Comparisons: Charts help compare different data points, making it easier to spot trends.
  - c. Clarity: They simplify complex data, helping users analyze information quickly.
  - d. Communication: Charts help convey data effectively, aiding understanding and decision-making.
  - e. Accessibility: They are easy for everyone to understand, promoting better communication.

### Competency-Based, High Order Thinking Skills Questions

#### Interpretation and Analysis Skills

#### Data Compilation and Comparison

Do it yourself.

#### Compare the Facts

Match the following Examples with their correct Application:

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

Examine information and find evidence.

Read the statement and select the correct reason of the two given below each statement.

1. Reason 1            2. Reason 2            3. Reason 2            4. Reason 1            5. Reason 2

## Chapter 4 – Data Representation in Digital Devices

### Exercises

#### A. Choose the correct answer.

1. B                      2. A                      3. B                      4. C                      5. B

#### B. Fill in the blanks.

1. 15            2. 9            3. Carried forward            4. Borrowed            5. 2

#### C. Answer the following questions.

1. Computers are versatile machines and different types of computers are used for different purposes. That is why, computers use different coding systems. For example, modern PCs use ASCII-8 bit coding system while UNICODE system can identify a wider range of letters, symbols and alphabet.
2. Universal Character Set Code (UNICODE) is used today as standard in modern computers to help computers identify all the characters covered by ASCII as well as a wide range of characters in different languages, different symbols, mathematical symbols, emojis and historical scripts.

3. Binary number system is most suitable for computers today because it allows computers to perform a variety of tasks. Various operating systems and devices work with binary system. Programs made to run on these computers can be executed on different devices with no modifications. It is used in toys, digital devices, desktop PCs, smart phones and up to the range of supercomputers.

4. Binary arithmetic:

a.

1				
	1	0	0	1
+	1	0	1	0
1	0	0	1	1

b.

	1		
		1	0
	+	1	1
	1	0	1
+	1	0	1
1	0	1	0

c.

1	0	1	0	1
	-	1	0	1
1	0	0	0	0

d.

		1	1	0
	x	1	0	0
		0	0	0
		0	0	0
	1	1	0	
	1	1	0	0

e.

	1	0	1	0
		x	1	1
	1	0	1	0
1	0	1	0	
1	1	1	1	0

f. Out of 1101, divide 11 by

11 = 1, rem 0 Then, remaining is 01 So, answer is 100 and remainder 1

5. Decimal to binary:

a.  $255/2 = 127$ , remainder is 1

$127/2 = 63$ , remainder is 1

$63/2 = 31$ , remainder is 1

$31/2 = 15$ , remainder is 1

$15/2 = 7$ , remainder is 1

$7/2 = 3$ , remainder is 1

$3/2 = 1$ , remainder is 1

$1/2 = 0$ , remainder is 1

Read from the bottom (MSB) to top (LSB) as 11111111.

b.  $13/2 = 6$ , remainder is 1

$6/2 = 3$ , remainder is 0

$3/2 = 1$ , remainder is 1

$1/2 = 0$ , remainder is 1

Read from the bottom (MSB) to top (LSB) as 1101.

c.  $31/2 = 15$ , remainder is 1

$15/2 = 7$ , remainder is 1

$7/2 = 3$ , remainder is 1

$3/2 = 1$ , remainder is 1

$1/2 = 0$ , remainder is 1

Read from the bottom (MSB) to top (LSB) as 11111.

d.  $300/2 = 150$ , remainder is 0

$150/2 = 75$ , remainder is 0

$75/2 = 37$ , remainder is 1

$37/2 = 18$ , remainder is 1

$18/2 = 9$ , remainder is 0

$9/2 = 4$ , remainder is 1

$4/2 = 2$ , remainder is 0

$2/2 = 1$ , remainder is 0

$1/2 = 0$ , remainder is 1

Read from the bottom (MSB) to top (LSB) as 100101100.

6. Binary to decimal:

a. **Step 1:** Multiply each digit of the binary number by the corresponding power of two:

$$1 \times 2^2 + 0 \times 2^1 + 1 \times 2^0$$

**Step 2:** Solve the powers:

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

**Step 3:** Add up the numbers written above:

$$4 + 0 + 1 = 5.$$

b. **Step 1:** Multiply each digit of the binary number by the corresponding power of two:

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

**Step 2:** Solve the powers:

$$1 \times 16 + 1 \times 8 + 0 \times 4 + 1 \times 2 + 1 \times 1 = 16 + 8 + 0 + 2 + 1$$

**Step 3:** Add up the numbers written above:

$$16 + 8 + 0 + 2 + 1 = 27.$$

c. **Step 1:** Multiply each digit of the binary number by the corresponding power of two:

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

**Step 2:** Solve the powers:

$$0 \times 8 + 0 \times 4 + 1 \times 2 + 1 \times 1 = 0 + 0 + 2 + 1$$

**Step 3:** Add up the numbers written above:

$$0 + 0 + 2 + 1 = 3.$$

d. **Step 1:** Multiply each digit of the binary number by the corresponding power of two:

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

**Step 2:** Solve the powers:

$$0 \times 32 + 1 \times 16 + 0 \times 8 + 1 \times 4 + 0 \times 2 + 1 \times 1 = 0 + 16 + 0 + 4 + 0 + 1$$

**Step 3:** Add up the numbers written above:

$$0 + 16 + 0 + 4 + 0 + 1 = 21.$$

### Competency-Based, High Order Thinking Skills Questions

Investigate the following statements and write down the facts you find.

1. True

**Step 1:** Divide  $(56)_{10}$  successively by 8 until the quotient is 0:

$$56/8 = 7, \text{ remainder is } 0$$



7/8 = 0, remainder is 7

**Step 2:** Read from the bottom (MSB) to top (LSB) as 70.

2. False

Decimal has its root from the word “deca” that means 10. The base of decimal number system is 10. The digit 6 has its root from the word “hexa” hence  $10 + 6 = 16$  means “hexadecimal”. Base of hexadecimal number system is 16.

3. True. Base of a number system is the maximum number of digits in it like in binary it is 2, decimal is 10 and octal is 8 and so on.

4. False. Base of a number system is the maximum number of digits in it and not maximum value it represents like in binary it is 2, decimal is 10 and octal is 8 and so on.

5. A nibble is 4 bits. If all of them are set to 1 then the decimal equivalent of 1111 will be 15. Hence, nibble is not enough to represent 25 in binary. (Binary of 25 = 11001 i.e. 5 bits.)

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## Chapter 5 – HTML Images, Hyperlinks and Tables

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### Exercises

#### A. Choose the correct answer.

1. D                      2. A                      3. C                      4. B                      5. A

#### B. Fill in the blanks.

1. Align                      2. Alt, image                      3. TH                      4. Rowspan, colspan                      5. name

#### C. Answer the following questions.

1. Align attribute of IMG element determines how the text should be spread around the image. Image can be set in the middle of the text or top or bottom of the text. We can also set the image in center, right or left. By default, image alignment is in line with text.

E.g., 1: In this example we are showing how `<IMG SRC= “FLOWER.JPG” ALIGN= “MIDDLE”>` images are aligned with the text in a web page. Images can be aligned in different ways with the text. E.g., 2: In this example we are showing how `<IMG SRC= “FLOWER.JPG” ALIGN= “TOP”>` images are aligned with the text in a web page. Images can be aligned in different ways with the text.

2. Internal hyperlink points to the hyperlinked content in the same web page. This hyperlinked content is identified by unique name. For example, to hyperlink a paragraph we give the following code:

```
<A name= “para1”>This part may contain a paragraph of content</A>
```

Then, to refer to para1, we use this code:

```
<A href= “#para1”>Click here to go to para1</A>
```

External hyperlink points to any resource outside the web page. For example, following code is hyperlink to the home page of the web site:

```
<A href= “home.html”>Go Home</A>
```

3. Cellpadding attribute sets the distance between the content a table cell and the border of the cell while Cellspacing attribute sets the distance between the adjacent cells of a table. For example, following code is setting the cellpadding 5 points and cellspacing 10 points.

```
<Table cellpadding= “5” cellspacing= “10”>
```

Here goes the table structure and content.



</Table>

4. In a table, the adjacent cells across the rows are merged using rowspan attribute of tag and adjacent cells across columns are merged using colspan attribute of tag. For example,

```
<table border>
<tr> <td>QUARTER</td> <td COLSPAN=2>SALE DETAILS</td> </tr>
<tr> <td ROWSPAN=2>QRT1</td>
<td>Total items: 200</td>
<td>Sale Rs. 5400000</td>
</tr>
<tr> <td>Total items: 350</td><td> Sale Rs. 8000000</td></tr>
</table>
```

This will create:

QUARTER	SALE DETAILS	
QRT1	Total items: 200	Sale Rs. 5400000
	Total items: 350	Sale Rs. 8000000

5. For a website, we organise the content in multiple web pages. Then these web pages are hyperlinked together to allow the user to navigate the pages by following those hyperlinks. For example, from the home page, if user wants to go to "About" page then user will click the hyperlink for "About" page given on the home page. This way, web pages are organised by the help of hyperlinks to help the user move back and forth across the pages.
6. Images are important in a webpage because they make it look nicer and more interesting. They help to show information better, like pictures of products on a shopping website. Images also make a webpage more memorable and can create a certain feeling or mood. Overall, they make the webpage more enjoyable and easier to understand.
7. To make an image hyperlink in HTML, you can use the <a> (anchor) element and within it put an <img> (image) element.

For example:

```
<a href="https://example.com">
  
</a>
```

8. To hyperlink the word "NEXT" to go to a paragraph in the same file

```
<a href="#target">NEXT</a>
<!-- Target paragraph -->
<a name="target">This is the paragraph you will jump to.</a>
```

**D. Complete the following HTML code snippets.**

1. Background                      2. Src, Align                      3. TR, TD, TD, TR  
4. Href, Myfile2.html              5. name

**E. Mark the following statements as True or False.**

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

**Competency-Based, High Order Thinking Skills Questions**

**Read the statement and select the correct reason of the two given below each statement.**

1. Reason 1                      2. Reason 2                      3. Reason 1                      4. Reason 2                      5. Reason 1

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## Chapter 6 – Mobile Apps Basics with MIT App Inventor

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### Exercises

#### A. Choose the correct answer.

1. D
2. D
3. C
4. C
5. B (\*This is an additional question, should not ask in exam.)

#### B. Fill in the blanks.

1. Button1.click
2. Components
3. Event, Button
4. .aia
5. Properties

#### C. Answer the following questions.

1. A mobile app is the software that runs on the handheld devices such as smartphones and tablets to provide desired services.

Three main features of mobile apps are:

- a. Apps are easy to download and install on the device.
  - b. Apps are mostly free and very lightweight (on memory and processor).
  - c. Apps generally do not have licence restrictions as software have.
- 2\*. A web app is the responsive version of the website. The in-built micro browser of the device displays the website interface on the small screen of mobile device. Web apps do not install on the user's device. On the other hand, a hybrid app has the features of both native and web apps. It the elements of native as well as web apps. It provides certain important features even if device is not connected with the Internet. (\*This is an additional question, should not ask in exam.)
  3. The Designer part of App Inventor allows the user to use the graphical elements to create the user interface of the app. Blocks part allows the user to use various programming blocks to add the functioning of the app.
  4. Properties panel display the properties of the selected user interface component in the Designer part. User can change the properties according to the requirement. For example, the background color property of a textbox can be set to any desired colour.
  5. **Control blocks:** when \_\_\_\_\_.click, when \_\_\_\_\_.TouchDown  
**Math blocks:** +, -, empty number  
**Text blocks:** join, empty text, length  
**Variable blocks:** initialize global, get, set \_\_\_ to
  6. Button, Text Box, Canvas.
  7. Variables identify the data in our program. Each variable has a unique name. Where ever variables are used, the value of the variable is substituted.  
A variable stores one value at a time and any new value overwrites its older value.

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## Chapter 7 – Program Design with Algorithm and Flowchart

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### Exercises

#### A. Choose the correct answer.

1. B                      2. D                      3. C                      4. A                      5. D

#### B. Fill in the blanks.

1. Programs
2. Flowchart, Algorithm
3. Language
4. Decision
5. Condition

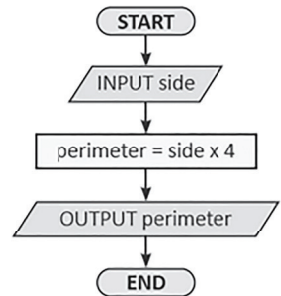
#### C. Answer the following questions.

1. Algorithm is a set of steps arranged in a sequence to get the desired output. The instructions in an algorithm are clear and simple to understand. Instructions are written in common native language such as English. For example, below is the algorithm to calculate the perimeter of a rectangle.

**Step 1.** INPUT side

**Step 2.** perimeter = side multiplied by 4

**Step 3.** OUTPUT perimeter



2. Two advantages of algorithms:

Algorithms are easier to understand due to 2 reasons:

- i. All the steps are mentioned clearly in them.
- ii. They are independent of any programming language.

Two advantages of flow charts:

- i. Looking at flowchart, we can easily understand the flow of the program.
- ii. It is easy to analyse the solution of the problem.

3. A loop executes the statements repeatedly depending on given conditions. Usually, loops are represented by the block WHILE-END WHILE. For example, following loop displays a variable X 100 times.

**Step 1.** X = 0

**Step 2.** WHILE X < 100

**Step 3.** Display X

**Step 4.** Increase X by 1

**Step 5.** END WHILE

4. 5 main parts of a flowchart are:

i. Terminators 

ii. Arrow 

iii. Process 

iv. Decision 

v. Connector 

Uses of flowchart parts are:

i. Terminators: It starts and ends the flowchart.

ii. Arrow: It shows the sequence of actions.

iii. Connector: It connects one part of the flowchart to other on the next page.

### Competency-Based, High Order Thinking Skills Questions

Investigate the following statements and write down the facts you find.

1. False. Logical sequence of steps is important since a task can be done properly when the steps are executed in a desired way.
2. False. Arithmetic expressions help in performing calculations and processing the data.
3. True.
4. True. With the help of variables, we can deal with changing values easily just by referring to the variable name.
5. False. The loop constructs or blocks help computer execute statements repeatedly.

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## Chapter 8 – Programming with Python

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### Exercises



#### A. Choose the correct answer.

1. B                      2. D                      3. C                      4. D                      5. B

#### B. Fill in the blanks.

1. +
2. Variable
3. Keywords, Identifiers
4. AND
5. True (Replace False by True)

#### C. Answer the following questions.

1. Python is easy to use, open-source language, portable, rich in pre-designed libraries.
2. i. Python is both compiler-based and interpreter-based language. Compiler converts the Python program (source code) in to lower-level byte code. Byte code is executed by the interpreter line-by-line.  
ii. Python variables do not have any defined type. They acquire the type according to the type of data they store. E.g. a variable storing a number becomes numeric and if the same variable stores text then it becomes string type.
3. Operators are used to handle data in different ways such as processing and comparing. Operands are the values on which operators perform their action. For example, + operator adds two

operands 5 and 10 as  $5 + 10$  giving the result 15.

4. Comparison operators return either true or false after comparing the values. For example: if  $a=10$  and  $b=13$  then the condition  $a>b$  will return false while  $b>=a$  will return true.
5. Logical operator NOT reverse the given condition. For example,  $\text{NOT}(x=y)$  means  $x$  is not equal to  $y$ .
6. The 2 major difference in Python command mode and script mode are:
  - i. In Python command mode we cannot save the command in a file but scripts are saved as .py files.
  - ii. Python commands execute one by one, giving the result while script runs a set of instructions in it at once.
7. The expression  $(\text{"A"}*3) == \text{"AAAA"}$  will return False because  $\text{"A"}*3$  evaluates to  $\text{"AAA"}$ , and  $\text{"AAA"}$  is not equal to  $\text{"AAAA"}$ . To get the reverse output (i.e., True), we can use either  $\neq$  operator like this:  $(\text{"A"}*3) \neq \text{"AAAA"}$  or we can use logical operator "not" like this:  $\text{not} ((\text{"A"}*3) == \text{"AAAA"})$
8. 

```
# Input average fuel efficiency of the cargo plane average = float(input("Enter the average fuel efficiency of the cargo plane (km per litre): "))  
# Check if the average is invalid (0, negative, or more than 12)  
if average <= 0 or average > 12:  
    average = 8 # Assume average as 8  
# Distance from city X to city Y  
distance = 1300 # in kilometers  
# Calculate the amount of fuel needed  
fuel_needed = distance / average  
# Display the amount of fuel needed  
print("The cargo plane needs", fuel_needed, "to reach its destination.")
```
9. In Python, variables are dynamically typed. This means their type is determined at runtime based on the value assigned to them. Unlike certain other programming languages that require explicit declaration of variable types, Python does not mandate such declarations.
10. a. 2                      b. False                      c. -1                      d. 0

### Competency-Based, High Order Thinking Skills Questions

Complete the following truth table by filling the correct output:

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

Match the symbols/boxes with use in the flowchart.

1. G      2. D      3. F      4. E      5. A      6. B      7. C

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## Chapter 9 – Image Processing with GIMP

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### Exercises

#### A. Choose the correct answer.

1. C                      2. C                      3. D                      4. B                      5. D

#### B. Fill in the blanks.

1. Locked              2. Threshold              3. Flattened              4. Text                      5. Color picker

### C. Answer the following questions.

1. Various operations on layers are:
  - i. Flatten Image: GIMP layers can be merged together to create the final single image. This process is called flattening. Flattened image, once saved, cannot be broken back into layers.
  - ii. Merge Down: This merges the current layer to the layer right below it.
  - iii. Duplicate Layer: Makes a copy of the layer.
  - iv. Delete Layer: Deletes a layer.
  - v. Hiding/Unhiding and Locking/Unlocking Layer: To work with a particular layer, you can hide other layers. To hide/unhide a layer, click on the Eye icon beside its name in the Layers panel. If you lock a layer, it cannot be modified until unlocked.
2. Layers help in managing various parts of an artwork separately. This way it is easier to work with one part of art work without affecting other parts. For example, if you create a scene of a bird flying then the sky could be in the bottom most layer and the bird can be in the layer above it.
3. Filters apply special effects on the art work. Filters are arranged in various categories under Filters menu. You can apply the filters on a section or the whole layer. Filters are useful in enhancing the look of the images significantly.
4. While working with images, we need to make selections in different ways such as on the basis of colours or shape. Hence, to suit various ways of selections, we have multiple selection tools in GIMP.
5. The 3 transform tools in GIMP are:

**Flip:** Flip selection vertically or horizontally. Specify Direction of flip in the Tool Options.

**Handle Transform:** Transform image or selection by dragging 4 handles around it.

**Cage Transform:** Transform selection by multiple handles around it.

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## Chapter 10 – Artificial Intelligence Techniques

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### Exercises

#### A. Choose the correct answer.

1. D                      2. C                      3. B                      4. C                      5. B

#### B. Fill in the blanks.

1. Generalised    2. Reactive            3. Narrow            4. Theory of mind    5. Self-awareness

#### C. Answer the following questions.

1. AI is the field of conceiving, designing and developing machines which should perform tasks that usually require human intelligence.
2. Two examples of narrow intelligence:
  - i. Performing web-wide search of content (e.g. Google search).
  - ii. Recognising face among several single image shots or group images.

#### Two examples of strong intelligence:

- i. An airplane training system that functions without the help of a trainer.
- ii. An intelligent chat-bot that understands customer's needs and suggests solutions by its learned intelligence.

3. On the basis of functionality, the 4 types of AI are: Reactive machines, Limited Memory, Theory of mind and Self-awareness.
  - i. Reactive machines: As the name suggests, a reactive machine knows how to respond to a particular stimulus (input) on the basis of a set of rules and the logic to apply those rules in all possible scenarios. They show the most basic type of AI. They do not store learning by previous problem solving. Computers that play strategy games against humans are examples of reactive machines.
  - ii. Self-awareness: Such machines are truly intelligent machines. Such machines, of course, do not exist as this chapter is being written but endeavours to develop machines that exhibit intelligence exactly like us humans are ongoing.
4. In the context of machine learning, the collected data is divided into 2 parts – training data and testing data. Training data is used to train the AI algorithm to perform the desired task or action. Once the algorithm is trained, its performance is tested by the help testing data. If the test is passed, the algorithm is considered to be trained.
5. Various types of machine learning are Supervised learning, Unsupervised learning, and Reinforcement learning.

Supervised learning is used to train the machine with a set of rules. Machine is fed with the following:

- a. Data to learn from.
- b. Description of the data to identify it (also called labels)
- c. Rules and guidelines to follow to learn.
- d. Output expected of the machine.

Such machines perform certain tasks quicker, faster and better without human intervention.

For example, clustering people on the basis of similar properties, analysing reviews and ratings, predicting weather, forecasting events, identifying face and images etc.

## Class 8

### Chapter 1 – Cyber-Safety and Cyber Crime

#### Exercises

**A. Choose the correct answer.**

1. B                      2. C                      3. D                      4. B                      5. D

**B. Fill in the blanks.**

1. Worm                      2. Black Hat                      3. SSL                      4. Cyberattacks                      5. Piracy

**C. Answer the following questions.**

1. Cyberbullying is an act of harassing someone online in different ways such as sending unsolicited, unconciliated messages, images or content: threatening online, mocking.

Children must always get in touch with their elders immediately in such a case without any hesitation or shame.

2. Trojans appear to be useful programs like games or utility but in fact, they causes harm to the computer. They can bypass antivirus software.

Worm is a mild threat. It replicates itself and spreads from one computer to another over a network. This way, worms consume all the hard disk capacity and slow down the systems.



Spyware quietly monitors all user activities on the computer as well as the data and transfers it to the external party. It is very small in size and hard to detect.

3. Cyber fraud is illegal activities conducted online or through digital means with the intention of deceiving individuals, organizations, or systems for financial gain or other malicious purposes.

E.g. Credit card information such as passwords and PIN are stolen by the hackers. These details are used to make unauthorised purchases.

In Email fraud, the user is sent a message informing about some lottery or some very attractive offer to lure the user into making heavy payments.

4. Following are the common security measures we must follow to be safe from cyber threats are:
  - i. When we use emails or log in to a bank's website to make a transaction, we should use a strong password. That is, there should not be a password that is easily guessed.
  - ii. Open the email attachment carefully, and do not open any email attachments from an unknown sender. After downloading them, make sure to scan with antimalware software.
  - iii. It is illegal to download pirated items for free, such as movies or commercial software, and it can also put our sensitive data at risk.
  - iv. We should not fall into the trap of free Wi-Fi anywhere. Otherwise, these free WI-FI hotspots can steal our personal information and misuse it.
5.
  - i. Cybercrime: Unauthorised access with the intention of misuse of someone's personal data.
  - ii. Cyberthreat: Any threat that puts the computer, data and network to be stolen and misused.
  - iii. Cybersecurity: Measures to prevent cybercrime and fight cyberthreats.
  - iv. Cyberbullying: Act of threatening, harassing or mocking someone online.

### Competency-Based, High Order Thinking Skills Questions

Read the statements. Write the reasons for the True ones and mention the true fact about the False ones.

1. Yes. To commit cybercrimes one should have deep knowledge of computer working, networks, and software.
2. False. Good people never indulge in cyber terrorism. Good people help fight it instead.
3. False. Spywares are installed by the cybercriminals to steal data from the computer user.
4. False. Software piracy harms the hard work of the developer and it is a punishable crime.
5. True. Public Wi-fi systems cannot be trusted for suitable security.

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## Chapter 2 – Excel Formulas and Functions

---

### Exercises

#### A. Choose the correct answer.

1. D                      2. A                      3. C                      4. B                      5. A

#### B. Fill in the blanks.

1. Aggregate      2. Autosum      3. Edit      4. Formula      5. Address, Referencing

#### C. Answer the following questions.

1. A formula is a user-defined expression to perform calculations. Formulas are designed by the users as per their requirements but functions are inbuilt feature to perform a variety of calculations over multiple values and data quickly and easily.



2. Cell referencing is the feature that allows automatic calculations because when we make changes in the values in the cells which are referred to in a formula or function then the results of the calculations change according to the changed values.
3. The \$ sign is used to make the cell address absolute by putting the \$ sign preceding both the column and the row.
4. SUM() : Returns total of given values in arrange or set of values.  
E.g. =SUM(D2:D11)  
=SUM(D2,D5,D7, D11)  
COUNT(IF): Returns Count of given values on the basis of some criteria.  
E.g. =COUNTIF(D2:D11,">4000") will return number with more than value 4000.  
TODAY(): Returns Current system date.  
E.g. =TODAY() Takes no arguments. Displays date in dd-mm-yyyy format.  
LEN(): Returns the number of characters in a text value.  
E.g. =LEN("how are you?") will return 12.

### Competency-Based, High Order Thinking Skills Questions

Spot the errors in the usage of the following functions and rewrite their correct form.

1. =COUNTIF("<=100", A1:A20) =COUNTIF(A1:A20, "<=100")
2. =IF("TRUE", "FALSE", 100<80) =IF(100<80, "FALSE", "TRUE")
3. =COUNT("A", 20, 40, "X", 1, "D") =COUNTA("A", 20, 40, "X", 1, "D")
4. =LEN("life is beautiful", 4, 7) =LEN("life is beautiful")
5. =MID("CROSSROADS", "ROAD") =MID("CROSSROADS", "ROAD", 4, 7)

## Chapter 3 – Introduction To RDBMS

### Exercises

#### A. Choose the correct answer.

1. B                      2. D                      3. A                      4. C                      5. C

#### B. Fill in the blanks.

1. Null Value      2. Primary      3. Foreign key      4. Required      5. Database, RDBMS

#### C. Answer the following questions.

1. Data are raw facts, figures, or symbols that represent quantities, objects, or events. It is unprocessed and lacks context or meaning on its own.  
Information is processed and logically related data that has been given meaning, relevance, and context. It is useful for decision-making or understanding.
2. Organised collection of data is called database. A database processes and gives information from the data stored in it and enables users to query, analyze, and retrieve specific data based on their needs or criteria.
3. Sharing data helps reduce redundancy because instead of storing the same information multiple times in different places, it is kept in one central location where everyone who needs it can access it. This prevents unnecessary duplication and ensures only one authoritative source for each piece of data.

4. Database management systems are used by all the industries such as schools to store students' and teachers' details, banks to store financial data, travel agencies to store vehicles and passenger details, hotels to store the details of rooms and guests, Ecommerce web sites to store details of products and customers, and hospitals to store diagnosis and treatment details.
5. To get the information we want from a database; we use query. It looks up the database what information we need for and how we want it organized. Then, the database searches through all the data it has and gives us back the results that matches our query.

### Competency-Based, High Order Thinking Skills Questions

Write True against the correct statements and write the correct fact below False statements.

1. False. Information is generated by relating the data logically. Without data there cannot be information.
2. True. Databases are installed on computers and servers which can crash anytime.
3. False. Education field includes schools, colleges and all educational institutes which need to store the bulk data about students, courses and teachers in a database.
4. True. Tables are symmetrical in structure.
5. False. Primary key only identifies a record in a table uniquely. To relate tables on common fields and matching values, we need foreign key also.

## Chapter 4 – Working with RDBMS

### Exercises

#### A. Choose the correct answer.

1. A                      2. A                      3. B                      4. D                      5. C

#### B. Fill in the blanks.

1. Sort Z to A                      2. Sort Largest to Smallest                      3. Design View  
 4. Cascade update                      5. One-to-many

#### C. Answer the following questions.

1. Text Filters are applied on a field which contains text type of values. They are used to filter the records on the basis of text values. Date Filters are applied on the fields that contain dates or time. Number Filters are applied on the fields that store numeric values. Organised collection of data is called database. A database processes and gives information from the data stored in it and enables users to query, analyze, and retrieve specific data based on their needs or criteria.
2. To display Student\_name and Marks from the table Exam using Query Design (Change Query Wizard to Query Design):
  - a. Under Create tab, in Queries group, click on Query Design.
  - b. In Show Table popup, select table Exam. Click on Add button. Then click on Close button.
  - c. Double click on the Fields Student\_name and Marks to include them in the query
  - d. Close the Query Design window and select Yes to save it.  
Specify a relevant name and click OK.
3. Criteria in a query determines which records will be returned by the query after execution. The records that meet the criteria are returned by the query. Criteria are designed depending on the user requirements. For example, if we need to see the student records who are in class 7 and

who secured marks more than 70 then the criteria will be: class = 7 and marks>=70.

4. The steps to relate the two tables are:
  - a. Database Tool tab > Relationships group > Relationships option > Show Table popup > Add both the tables one-by-one by double clicking on them.
  - b. In the Relationships window, drag the common field from one table on to the same common field of the other table.
  - c. Select the checkboxes for referential integrity as you need.
  - d. Click on Create button.
  - e. Close Relationship window and save when prompted.
5. To ensure correct and valid data is stored in the tables is called referential integrity.

**Example 1:** Any change in the primary key value is reflected in the matching values in related tables.

**Example 2:** Deletion in child table is not allowed if related master table has a matching record.

**Example 3:** Any deletion in master table will delete the related records in the related child tables.

### Competency-Based, High Order Thinking Skills Questions

Write the possible reason/consequence for each of the statements given below.

1. The common fields must have the matching values to take out desired data from both the tables.
2. All the records in the table will be displayed.
3. The data of similar type can be matched. E.g. a number type will not match with a date type.
4. Any deletion in master table will automatically delete all the matching records in all the related tables.
5. Email IDs and Phone numbers for a user are treated as primary key values in the database.

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## Chapter 5 – HTML Lists and Forms

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### Exercises

#### A. Choose the correct answer.

1. C
2. A
3. C
4. A
5. B

#### B. Fill in the blanks.

1. Hollow circles
2. Type
3. Reset
4. Textarea
5. Select, Option

#### C. Answer the following questions.

1. `<input value="save" type="submit">`
2. `<select multiple>`
3. `<textarea rows="5" cols="80">`
4. `<dl><dt>OL</dt><dd>Ordered list</dd></dl>`
5. `<ul><li>2023</li><ol><li>Jan</li><li>Feb</li></ol></ul>`

#### D. Answer the following questions.

1. Type attribute in OL tag determines the numbering style the list items for example `<ol type="i">` will display the list items in lowercase roman numerals. In UL tag, the Type attribute determines the shape of the bullet as circle, disc or square. Example: `<UL type="square">`

2. `<dl>`  
`<dt>Photosynthesis</dt>`  
`<dd>Process in plants to make food with Carbon dioxide, sunlight, water and chlorophyl.</dd>`  
`<dt>Refraction</dt>`  
`<dd>Process of bending of light when it enters from one medium to other.</dd>`  
`</dl>`
3. Radio buttons are grouped by giving them same name using Name attribute and unique IDs. For example:  
`<Input type= "radio" name= "agree" ID= "ryes">`  
`<Input type= "radio" name= "agree" ID= "rno">`  
 Here, both the radio buttons belong to the group "agree" and their unique IDs are "ryes" and "rno" respectively.
4. Reset type of button clears all the controls in the form and resets it to the original form. Submit button sends the data entered on the form to the web server.
5. Multiple attribute of Select tag indicates that multiple items in a list can be selected using Shift/ Ctrl keys. Selected attribute of Option tag shows that option (item) in the list already selected.

## Chapter 6 – Programming in Python

### Exercises

#### A. Choose the correct answer.

1. B                      2. C                      3. D                      4. D                      5. C

#### B. Fill in the blanks.

1. strings, numbers    2. == , =                3. String                4. Zero                5. Continue

#### C. Answer the following questions.

1. Comparisons operators help in decision-making by comparing values. For example, the expression `age >= 18` means that value in variable age is compared to be equal or more than 18. Such an expression is called "condition". Multiple conditions are combined with the helps of logical operators. For example, `(age >= 18) AND (income <= 5000)` – here two conditions are combined with logical operator AND which means both the conditions should be true. If AND is replaced by OR then it will return true if any one of the conditions is true.
2. Variables identify the data on our programs. When program runs, the values may change. Using a variable makes it easy to handle the changing values. When we mention a variable name in the program, it is substituted by its value.  
 Rules to name a variable are:
  - a. It can be only one word.
  - b. It can use only letters, numbers, and the underscore ( `_` ) character.
  - c. It cannot begin with a number.
  - d. It cannot be a keyword.
  - e. Variables are case sensitive – upper-case and lower-case variable names are different.
3. if-else statement helps in evaluating a condition and depending on the condition returning true

or false, the program follows the direction. If the condition given with “if” keyword returns true then the statements in “if” part execute otherwise the statements given in the “else” part are executed. For example:

```
ans = input("Enter yes or no: ")
if ans=="yes":
    print("The answer is affirmative.")
else:
    print("The answer is negative.")
```

Here, depending on the value “yes” or “no” coming from the user, the program will display the message “The answer is affirmative.” (if condition ans=="yes" returns true) otherwise “The answer is negative.” (if condition ans=="yes" returns false).

4. while loop needs condition to evaluate and depending on that, it executes zero or more times. We also need to make arrangement to terminate the loop when needed by manipulating the value of the variables which control the loop execution.

For loop is useful when we need to navigate a series of values or a range of numbers. For loop terminates on its own when the set of values is navigated completely.

Both the loops can also be terminated by using “break” keyword after checking a condition

For example:

<pre>X=0 while X&lt;10:     print(X)     X = X + 1 '' Here, we are increasing variable X so that loop terminates when the value of X becomes 10. ''</pre>	<pre>for X in [1,2,3,4,5,6,7,8,9,10]:     print(X) '' Here, for loop is navigating through the list of numbers on its own. There is no need to manipulate variable X. ''</pre>
---	--

5. Many times we need to terminate the loop even before the condition with the while loop is returning true or the range of values in for loop are not navigated completely. To terminate the loops during their execution, depending on some condition, we use “break” keyword. For example,

```
for x in "This-is-a-sentence.":
    print(x)
    if(x=='-'):
        break
```

Here, the output will be “T”, “h”, “i”, “s”, and “-” only because loop will terminate when value of variable x will be “-” and the condition of “if” will be true.

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## Chapter 7 – Video Editing with Shotcut

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### Exercises

**A. Choose the correct answer.**

1. D                      2. C                      3. D                      4. A                      5. B

**B. Fill in the blanks.**

1. Append              2. Timeline              3. Ripple              4. Markers              5. MLT, Media

**C. Answer the following questions.**

1. In our project, all the audio, video and image files that we need can be added to the Playlist for easy access.

Timeline is the area in which we add the media files for editing and applying filters. Using Timeline we work on the media files in our project.

2. Ripple means automatically adjusting the pieces of media clipping on the Timeline when any clip is deleted or any new clip is inserted between the existing clips. Ripple mode is activated/deactivated by clicking on the “Ripple” button on the Timeline.

3. Filters are the special effects which we can apply on the selected clips. For example, we can use Text filter to display some text on the video clip or we can apply Fade in and Fade out effect in the beginning and end of a clip respectively for audio and video.

4. To increase the volume of a video in Shotcut, we can select the video clip on the Timeline > Go to Filters tab > Click on + button, locate and add “Gain/Volume” filter > Set its “Level” property for increasing the volume.

5. To add new video track: open the Timeline Menu > Track Operations > Add Video Track option.  
To add new audio track: open the Timeline Menu > Track Operations > Add Audio Track option.

**D. Mark the following sentence as True or False.**

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

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## Chapter 8 – Photoshop Basics

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### Exercises

**A. Choose the correct answer.**

1. A                      2. B                      3. D                      4. B                      5. D

**B. Fill in the blanks.**

1. Alt                      2. Tolerance              3. Gradient              4. Alt + Click              5. Background

**C. Answer the following questions.**

1. By default, when we make a new selection, any previous selection is removed. We can use new selection in the following modes:

Add to selection: The new selection is merged (added) with any existing selection.

Subtract from selection: The new selection is subtracted from the existing selection.

Intersect with the selection: The common overlapping area of the new and existing selection remains as the final selection.

- Image slicing is useful when it has to be displayed on a web page. A web page may have different partitions. The image can be sliced according to those partitions so that a piece (slice) of the image can be displayed in each part of the web page in such a way that they together look like one single image.
- Pick the Red Eye tool from the Toolbox then click on the redeye area in the image. The correction will be applied automatically.
- Blurring means giving a faded, out-of-focus look to the pixels, sharpening makes the pixels more distinct as compared to the other pixels in the image.
- Dodging means lightening the pixels, burn is the reverse of dodge that is, darkening the pixels.

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## Chapter 9 – Character Animation using Animate

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### Exercises

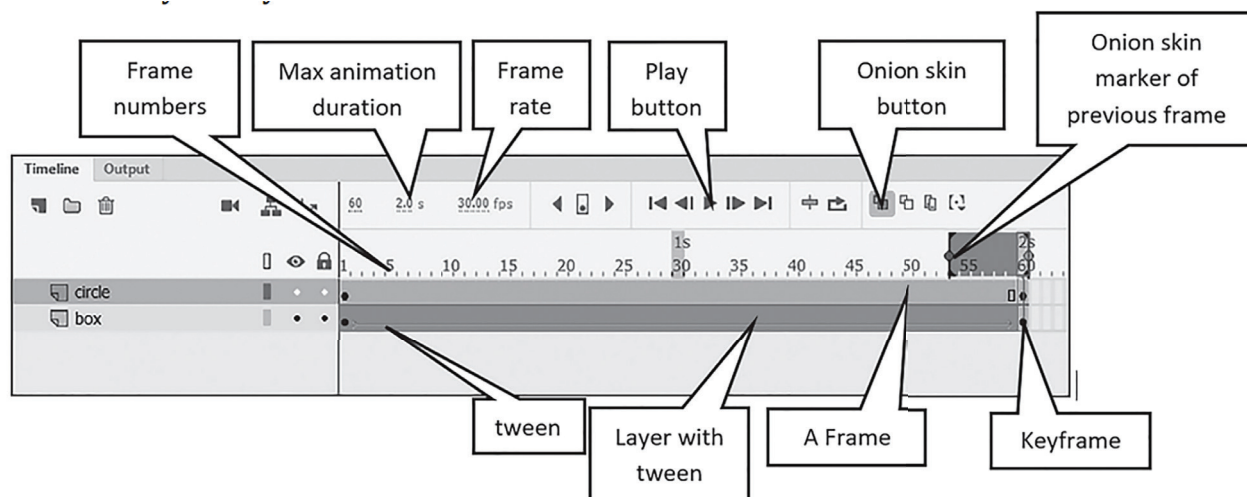
#### A. Choose the correct answer.

- B
- C
- A
- D
- B

#### B. Fill in the blanks.

- Frame
- Keyframe
- Morphing
- Bone
- Layers

#### C. Identify the key elements.



#### D. Answer the following questions.

- A single drawing in animation is called a frame. In a sequence of frames, whenever there is a significant change in the drawing then that frame is called a keyframe.
- The Timeline is the sequence of frames and stack of layers. As the drawings are arranged on the Timeline, the animation appears on the stage. The drawings on the Timeline are arranged as a sequence of frames. Multiple drawings can be kept on separate layers stacked one upon another. We can also change the frame rate on Timeline to set the speed of the animation.
- Tweneing makes the object on the stage move from one point to another.  
Shape tween is morphing of one shape into another. Shape tween does not apply to symbols.



Motion tween allows moving an object on the stage from one point to other. Before applying Motion tween, we need to convert the drawing into a symbol.

4. A drawing can be converted into a symbol and saved as a collection in the project Library by unique name. Symbols are useful when we need to apply Motion tween and also when a symbol needs to be used multiple times in the animation. For example, car wheel, birds, trees, etc.
5. Onion skin feature allows to display the drawings of some previous frames. This is useful when we are drawing an action in sequence. Onion skin helps us to see where is the previous drawing so that we make the next drawing in proper continuation. For example, walking man, jumping cat, a flower waving in breeze, etc.

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## Chapter 10 – Artificial Intelligence: Data, Computer Vision and NLP

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### Exercises

#### A. Choose the correct answer.

1. C                      2. D                      3. B                      4. D                      5. B

#### B. Fill in the blanks.

1. NLP    2. Learning    3. Domain    4. Edges, Corners    5. Syntax, Semantics

#### C. Answer the following questions.

1. The 3 domains of AI are Data, Computer Vision (CV) and Natural Language Processing (NLP). CV deals with the AI algorithms that process and analyse visual data such as images, videos, etc. NLP domain includes the AI algorithms that process and analyse natural language, speech and written text.
2. Artificial intelligence is the field to develop machines that should learn and act like humans. Artificially intelligent machines work on sophisticated algorithms which are capable of learning from different types of data such as text, numbers, dates, images, audio, video, speech, etc. After learning they can form their own set of rules and understanding. A machine needs data to learn what it is supposed to do.
3. Computer vision is the AI domain that deals with analysing visual data such as images, spatial data (images taken by satellite), video frames, and live feeds of data like faces, video recording, etc.

Applications of Computer Vision are:

- i. Identifying the object in an image
  - ii. Face recognition
  - iii. Handwriting recognition Classifying images
  - iv. Identifying cancer cells
  - v. Processing visual data to locate forest fires, floods, droughts, etc.
  - vi. Identifying products on an E-Commerce site, etc.
4. Ability of a machine to understand and analyse natural human language is called Natural Language Processing (NLP).

Applications of NLP are:



- i. Digital assistants and chatbots
  - ii. Speech recognition
  - iii. Language translation
  - iv. Document classification, validating documents
  - v. Identifying fake news and hate speech, detecting threat keywords in online communications
  - vi. Online training.
5. It is challenging for a machine to understand human language due to following reasons:
- i. Multiple of languages in the world.
  - ii. Complex grammar rules of the language.
  - iii. Multiple meanings, pronunciations and hidden meanings.
  - iv. Meaning changing due to context and emotions.
  - v. It is hard for machines to understand jokes, sarcasm, poetry, etc.

**D. Categorise the following AI Applications into their correct domains – DATA, CV & NLP.**

- |  |  |
|--|--|
| 1. Autonomous vehicle. (CV)                            | 2. Predicting rainfall. (Data)         |
| 3. Digital assistant. (NLP)                            | 4. Face recognition. (CV)              |
| 5. Forecasting next sales figures. (Data)              | 6. Identifying handwriting. (CV & NLP) |
| 7. Detecting hate speech. (NLP)                        | 8. Identifying fake news. (NLP)        |
| 9. Detecting fraudulent transactions in a bank. (Data) | 10. Search product by its image. (CV)  |

