Class 5

Answer Key

Modular Ver. 4.0

1. Evolution of Computers

Exercise

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

B. 1. Prof. Howard Aikens 2. Lady Ada Lovelace 3. 5200
4. Intel

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

D. 1. In 1642, a mathematician, Blaise Pascal invented the calculating machine called the Pascaline adding machine. This machine was capable of performing only addition and subtraction.

2. In the third generation, the invention of Integrated Circuits (IC) led to smaller-sized computers with better functioning and more storage.

3. After 1955, use of transistors and magnetic tapes changed the image of the electronic computer.

E. 1.

First Generation	Second Generation
• Huge in size	• Small in size
• Very expensive	• Less expensive
• Made up of vacuum tubes	• Faster and reliable
	• Made up of transistors

2. In 1833, Charles Babbage invented a machine called the Analytical Engine, the first ever working model of a mechanical computer, a fully program controlled machine.

The instructions given to Babbage's Analytical Engine were in the form of 0's and 1's and the first person to introduce this concept was Lady Ada Lovelace.

3. Features of Fourth Generation computer are:

- VLSI called microprocessors invented.
- Small in size and could be placed on an office table.
- Introduction of GUI operating system.

F. 1. Abacus is a useful device to teach basic arithmetic to young students because it helps kids see and move beads to understand addition and subtraction easily.

2. Fifth-generation computers are used to create such advanced games because they feature AI, new versions of GUI, and advanced processors for high-quality graphics and fast processing.

2. Working with Windows 10

EXERCISE

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

B. 1. Folder 2. Network 3. Recycle Bin 4. This PC

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

D. 1. File Explorer is a file manager that manages files and folders. It is used to create, view, delete, rename, copy, move and search files and folders.

2. You can select multiple files or folders by clicking on the first file you want to select. Then, press and hold down Ctrl key as you click on each file you want to select.

E. 1. To create a new folder in Windows 10, follow the given steps:

Step 1: Open the folder in which you want to create the file/folder.

Step 2: Right-click on the empty section of the folder and click on New option from the drop-down menu.

Step 3: Click on Folder option to create a new folder.

2. To restore a deleted file, follow these steps:

Step 1: Double-click on the Recycle Bin icon on the desktop. The Recycle Bin window will appear, displaying all the files you hove deleted.

Step 2: Right-click on the file/folder you want to restore.

Step 3: Click on Restore option from the context menu.

3.

Copying a File	Cutting a File
When you copy and paste a file, the file will remain in its original location and will also appear in the new location.	When you copy and paste a file, the file will remain in its original location and will also appear in the new location.

F. 1. To rename a folder, Shreya should follow these steps:

Step 1: Open File Explorer and locate the folder to be renamed.

Step 2: Right-click on the folder you want to rename. A drop-down menu appears.

Step 3: Click on Rename option from the drop-down list. Enter a new name for the folder, press Enter key.

2. To restore a deleted file, James should follow these steps:

Step 1: Double-click on the Recycle Bin icon on the desktop. The Recycle Bin window will appear, displaying all the files you hove deleted.

Step 2: Right-click on the file/folder you want to restore.

Step 3: Click on Restore option from the context menu.

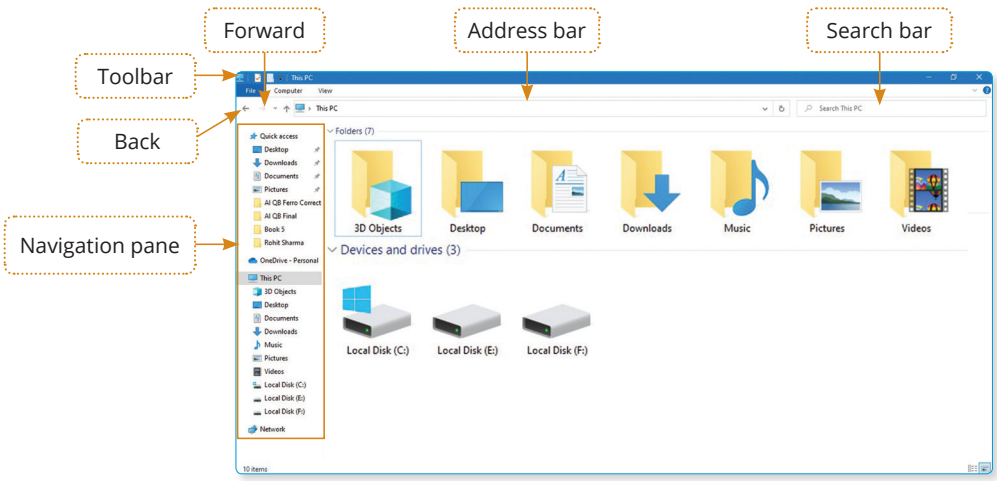
Worksheet 1

(Based on chapters 1 & 2)

A. 1. Analytical Engine 2. ENIAC and UNIVAC 3. Pascaline

4. Tabulating Machine 5. Step Reckoner

B.



C. 1. Video File 2. Transistor 3. Pascaline 4. Folder

3. More on Internet

Exercise

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

B. 1. Internet Service Provider 2. Google 3. Uploading 4. E-mail

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

D. 1. Through the e-mail your messages are delivered instantly to people anywhere in the world unlike traditional mail that takes a lot of time.

2. It is a link on a text or on an image, which on clicking takes the user to the another location.

E. 1. The various uses of Internet are E-mail, Information, Online Shopping, Online Chatting, and Downloading and Uploading Data. Many services are now also provided on the Internet such as online banking, job seeking, online education, online ticket booking, hotel reservations and online storage.

2. ISP: It stands for Internet Service Provider. It is a company that provides Internet access on payment of a monthly fee.

Modem: It stands for Modulator-Demodulator. Modem transfers digital information over telephone lines.

F. Riya can do online shopping using the Internet.

4. Algorithm and Flowchart

Exercise

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

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

C. 1. Start/Stop 2. Process 3. Decision 4. Input/Output

D. 1. In computer terms, 'Algorithm is the sequence of steps or computer operations which collectively solve a given problem'.

2. Flowcharts are used in analysing, designing, documenting or managing a process or program in various fields to solve problems.

E. 1. You must follow these basic rules while drawing a flowchart:

- The flowchart should be clear, neat and easy to follow.
- Maintain the direction of the flow from left to right or top to bottom.
- Only one flow line should come out from a process symbol.
- Ensure that the flowchart has a logical start and end.

2. Flowchart provides following advantages:

- It provides a better understanding of a problem.
- It facilitates a programmer to analyse the problem in detail.

F. 1. Algorithm to Prepare for a Picnic.

Step 1: Start

Step 2: Decide the picnic location.

Step 3: Make a list of things to carry (food, water, games, mat, etc.).

Step 4: Pack all the necessary items in a bag.

Step 5: Check the weather forecast.

Step 6: Get ready and leave for the picnic spot.

Step 7: Enjoy the picnic!

Step 8: Stop.

2. Algorithm to Calculate Total Cost of Items.

Step 1: Start

Step 2: Read how many items the user has purchased.

Step 3: Set the Total Cost to 0.

Step 4: Take the price of the first item and add it to Total Cost.

Step 5: Repeat Step 4 for all remaining items.

Step 6: Print Total Cost.

Step 7: Stop.

Worksheet 2

(Based on chapters 3 & 4)

A. 1. Process: It shows a process or action step. This is the most common symbol used in flowcharts.

2. Flow Line: It shows the direction in which the process flows.

3. Decision: It indicates a question or branch in the process flow. It is used when there are 2 options (Yes/No).

4. Start/Stop: It is used to show the start and stop points of the flowchart. It usually contains the words 'Start' or 'Stop'.

B. 1. URL 2. Surfing 3. Telephone and Cable Lines 4. Search Engine

C. 1. E-mail 2. Modem 3. X

Test Sheet 1

(Based on chapters 1 to 4)

Section A

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

B. 1. IBM 2. Folder 3. Internet Service Provider 4. Downloading
5. Network

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

Section B

A. 1. The fourth generation of computers.

2. An Algorithm is a set of steps in a sequential manner to solve a problem or to complete a task.

3. Organising files/folders helps you arrange your files more efficiently and effectively.

4. Any three social networking websites are Facebook, Instagram, and X.

B. 1. To delete a file or folder, follow these steps:

Step 1: Open the folder that contains the file you want to delete.

Step 2: Right-click on the file you want to delete. A drop-down menu appears.

Step 3: Click on Delete option.

2. Algorithm to Check Whether a Given Number is Even or Odd.

Step 1: Start.

Step 2: Read a number from the user and store it in N.

Step 3: Divide N by 2 and check the remainder.

Step 4: If the remainder is 0, then:

- Print The number is Even.

Otherwise:

- Print The number is Odd.

Step 5: Stop.

3. The things required for having an Internet connection are: Computer system, Telephone and Cable Lines, Modem, Web Browser, and ISP (Internet Service Provider).

5. Introduction to Scratch

Exercise

A. 1. d. 2. b. 3. b. 4. b.

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

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

D. 1. Three main tabs in Scratch are: Code tab, Costumes tab and Sounds tab.

2. To add a sprite, follow these steps:

Step 1: Click on the Choose a Sprite tool in the Sprites Info Pane.

A Choose a Sprite window opens. It shows the thumbnails of the available sprites.

Step 2: Click on a sprite to add it to your project.

3. Looks blocks are purple in colour.

E. 1. To change the appearance of the sprite, follow the given steps:

Step 1: Click on the Costumes tab. An image of the selected sprite appears in the tab. Here the selected sprite is cat.

Step 2: Click on the image of the sprite. Drag the selection blue border to select the cat. A border appears around it.

Step 3: Click on Fill and Outline options to change the colour and outline of the cat.

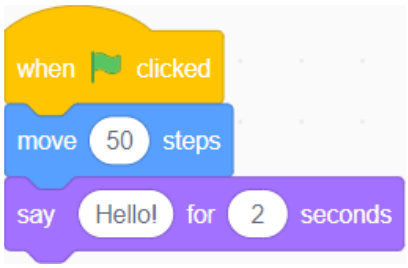
2. Stage Area: It is similar to a stage in a play where everything takes place. You can watch stories, play games and run your scratch projects on the stage.

Sprite: It is the actor who acts on the stage. Sprite is an object in Scratch that performs the function on stage area. The default sprite in Scratch is an orange cat.

F. 1. Do it yourself

2. Do it yourself

G. 1.



2. To save a project, Anjali should follow the given steps:

Step 1 Click on the File tab.

Step 2 Select Save to your computer option. The Save As dialog box appears.

Step 3 Open the location where you want to save the project.

Step 4 Type the name in the File name box.

Step 5 Click on the Save button.

6. More Blocks in Scratch

EXERCISE

A.	1. c.	2. a.	3. b.	4. c.
B.	1. Say	2. Go to	3. Sound	4. Horizontal
C.	1. F	2. T	3. F	4. F

D. 1. This block lets the sprite turn in clockwise direction by the given degrees.

2. This block is used to stop all sounds playing on all sprites.

E. 1. 'if on edge, bounce' block makes the sprite flip over if it touches the edge of the screen.

2. Looks blocks control how a sprite appears on the stage.

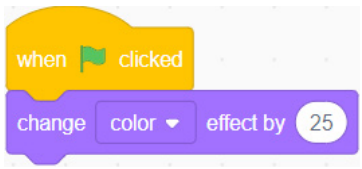
3. The centre of the stage has x and y values as 0.

F. 1. The blocks that are used to control the movement of a Sprite are known as Motion blocks. They are blue in colour. Some of the commonly used motion blocks are: 'move ( ) steps', 'turn ( ) degrees', 'go to x: ( ) y: ( )', 'go to (mouse-pointer)', 'if on edge, bounce', etc.

2. An event is a happening which occurs due to some other things that happened before it. So, Events block actually control how the blocks in a script, will start to run, if a particular action is done. Events blocks control events and the starting of scripts.

G. 1. Adam should use 'if on edge, bounce' block to achieve this.

2. To implement this Sophie should create the following script:



Worksheet 3

(Based on chapters 5 & 6)

A. 1. Coding area 2. Backdrop (It is the background of the Stage)

3. Green Flag 4. Motion blocks

B. 1. c. 2. d. 3. a. 4. b.

C. 1. The sprite will move 10 steps forward and then turn 30 degrees. This will repeat 360 times.

2. The sprite will continuously turn 15 degrees till without stopping.

7. Creating Shapes in Scratch

Exercise

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

B. 1. Pen up 2. 4 3. Stamp 4. 360

C. 1. Pentagon: Repeat 5 Move 100 Steps Turn 72 degrees

2. Hexagon: Repeat 6 Move 100 Steps Turn 60 degrees

3. Heptagon: Repeat 7 Move 100 Steps Turn 51 degrees

4. Nonagon: Repeat 9 Move 100 Steps Turn 40 degrees

5. Decagon: Repeat 10 Move 100 Steps Turn 36 degrees

D. 1. Polygons are 2D shapes with 3 or more straight lines and angles.

2. Repeat 3 Move 100 Steps Turn 120 degrees.

3. The Full Screen Control button is located on the top right corner of the stage

E. 1. To add Pen block, follow the given steps:

Step 1: Click on the Add Extension button at the bottom left corner of the Code tab. A Choose an Extension window opens.

Step 2: Click on Pen option. The Pen blocks are added to the Code tab.

2. To draw polygons in Scratch, you must remember a few thumb rules. They are:

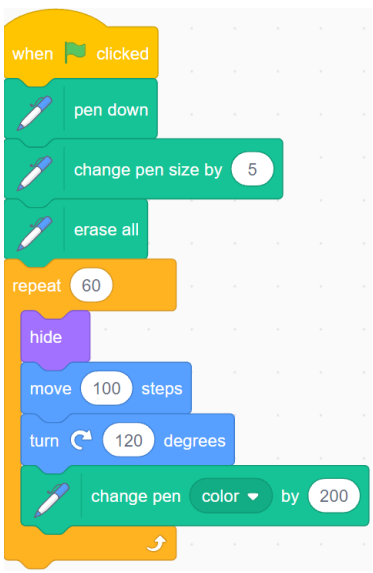
- You must know the number of sides in the shape. This is the value to be given in repeat block. For example, you give repeat 3 to draw a triangle and 4 to draw a square.
- Each time a repeat command is used, you draw a line and turn at a corner.
- You must know the degree of the angle at the corner. It is very easy to calculate this. Just divide 360 by the number of sides in the shape. For example, to draw a triangle, the turn will be 360/3 (sides of the triangle) = 120.

3. Clicking on Stamp block creates a duplicate of the current Sprite. The image is stamped on the stage. To see the image, click on the Sprite and drag. A duplicate of the Sprite appears behind it.

F. 1. Sam should use the following command to draw an octagon:

Repeat 8 Move 100 Steps Turn 45 degrees

2. To achieve this John should create the following script in Scratch:



G. 1. Do it yourself.

2. Do it yourself.

8. Creating a Game in Scratch

EXERCISE

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

B. 1. Cap 2. Ask and wait 3. Numeric 4. Condition 5. Reporter

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

D. 1. Stack blocks have a bowl shape cut on the top and a bump at the bottom.

2. A program is a group of commands and instructions that tell the computer to carry out a task. In scratch, a program is called a Script.

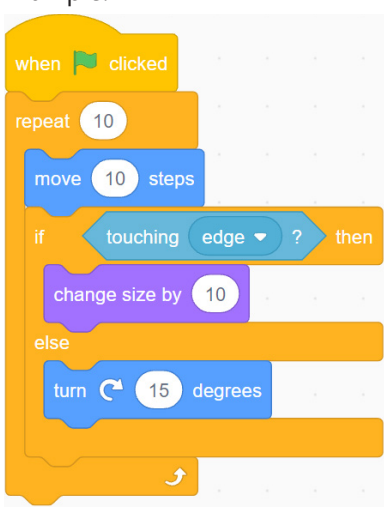
3. A string variable can store names, words, sentences, numbers, and enclosed in quotation marks.

E. 1. If...then block: In this block if the condition is true, the blocks inside conditional block will run. If the condition is false, the blocks inside conditional block will not run. Only the blocks outside the conditional block will run.

2. The ask and wait block prompts the user to type the input using the keyboard. It waits for the user input. No other block runs at that time.

3. Conditional blocks in Scratch help make decisions based on a condition. The "if...then" block runs specific commands only if the condition is true, while the "if...then...else" block runs one set of commands if the condition is true and another if it is false.

Example:



F. 1. Do it yourself.

2. For this use 'key ( ) pressed?' block from the Sensing blocks category.

Worksheet 4

(Based on chapters 7 & 8)

A. 1. The repeat block repeats a set of blocks for a given number of times. This block is also used to draw shapes where we have to give the same blocks again and again for a number of times.

2. The forever block keeps on repeating a set of blocks till the stop button is clicked. This block is similar to repeat block and expands automatically to accommodate the blocks you snap inside it.

3. This block is used to add a speech bubble to the sprite for the given time in seconds.

B. 1. d 2. c 3. a 4. b

C. Do it yourself.

Test Sheet 2

(Based on chapters 5 to 8)

Section A

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

B. 1. Say 2. Sound 3. 4 4. Stamp 5. Condition
6. Reporter

C. 1. F 2. F 3. F 4. F 5. T
6. F 7. T

Section B

A. 1. Looks blocks are purple in colour.

2. Looks blocks control how a Sprite appears on stage.

3. Polygons are 2D shapes with 3 or more straight lines and angles.

4. A program is a group of commands and instructions that tell the computer to carry out a task. In scratch, a program is called a Script.

B. 1. To change the appearance of the sprite, follow the given steps:

Step 1: Click on the Costumes tab. An image of the selected sprite appears in the tab. Here the selected sprite is cat.

Step 2: Click on the image of the sprite. Drag the selection blue border to select the cat. A border appears around it.

Step 3: Click on Fill and Outline options to change the colour and outline of the cat.

2. An event is a happening which occurs due to some other things that happened before it. So, Events block actually control how the blocks in a script, will start to run, if a particular action is done. Events blocks control events and the starting of scripts.
3. Clicking on Stamp block creates a duplicate of the current Sprite. The image is stamped on the stage. To see the image, click on the Sprite and drag. A duplicate of the Sprite appears behind it.
4. Conditional blocks in Scratch help make decisions based on a condition. The "if...then" block runs specific commands only if the condition is true, while the "if...then...else" block runs one set of commands if the condition is true and another if it is false.

   Example: