1. Evolution of Computers

EXERCISE

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

B. 1. Charles Babbage   2. Lady Ada Lovelace

     3. John Mauchly   4. IBM

C. 1. 1642   2. 1946   3. 1944   4. 1985

D. 1. The people used to calculate or count with the help of fingers, toes, pebbles, stones, sticks and bones in the ancient times.

     2. In fourth generation of computers microprocessors were used.

     3. ENIAC (Electronic Numerical Integrator And Computer), was the first electronic general purpose digital computer built in 1946 by John Mauchly and Presper Eckert.

E. 1. The first generation computers were made up of vacuum tubes whereas, second generation computers were made up of transistors.
Second generation computers were less expensive than the first generation.

     2. Two features of third generation computers are:

       (i) Third generation computers were made of IC's (Integrated Circuits).

       (ii) They were more affordable and dependable.

F. Shreya's grandfather's first personal computer (PC) from the early 1980s belongs to the Fourth Generation of Computers.

IN THE LAB

Do it yourself.

2. Working with Windows 10

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

B. 1. Video file 2. Music file 3. Image file 4. Spreadsheet file

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

D. 1. Name of the common folders provided by Windows 10 are Documents, Videos and Pictures.

2. Organised files and folders help us find the right files to use when we run a program.

E. 1. A folder is collection of various files and sub folders whereas a file is a collection of related information.

2. Steps to delete a file or folder:

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

Step 2   Right-click on File or folder.

Step 3   Click on Delete option.

F. Kabir can restore the file Homework.docx from the Recycle Bin on his computer.
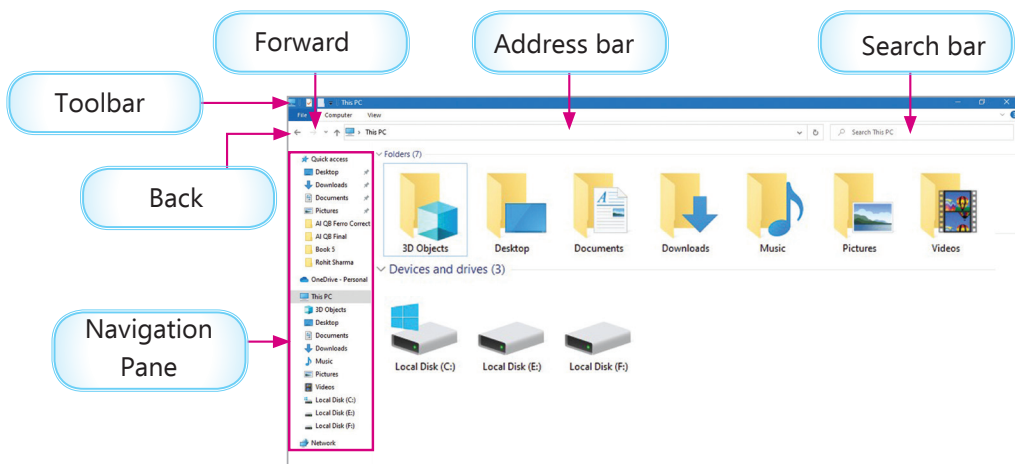
IN THE LAB

Do it yourself.

Worksheet 1
(Based on chapters 1 & 2)

A. 1. Analytical Engine 2. ENIAC

3. Pascaline adding machine 4. Tabulating Machine 5. Step Reckoner

B.

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

3. More on Internet

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

B. 1. information   2. search engines

  3. downloading   4. uploading

C. 1. GOOGLE CHROME   2. FACEBOOK

  3. INSTAGRAM   4. MODEM

D. 1. Internet Service Provider

  2. Modulator-Demodulator

E. 1. Internet is a global network of millions of computers and computer networks all over the world.

  2. Instagram, Facebook and YouTube

  3. It is a link on a text or an image, that you can click to go to another website.

F. 1. Uses of Internet are:

  (i) Internet is used to search information on any topic.

  (ii) Internet is used to buy and sell products all over the world.

  2. The things required for having an Internet connection are computer system, telephone and cable lines, modem, web browser and ISP.

G. 1. These are called hyperlinks. It is a link on a text or an image, that you can click to go to another website.

  2. Web browser

IN THE LAB

Do it yourself.

4. Algorithm and Flowcharts

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

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

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

D. 1. Algorithm is a set of steps in a sequential manner to solve a problem or to complete a task.

2. Flowchart is a graphical representation of the sequence of operations in an information system or program.

E. 1. Process symbol is used to show a process or action step.
Input/ Output symbol is used to represent the material or information entering or leaving the system, i.e. input and output.

2. Algorithm to check whether the given number is even or odd:

Step 1   Start.

Step 2   Read number and store them in A.

Step 3   Check if A%2 == 0.

Step 4   Print A is even or Odd.

Step 5   Stop.

F. Anita should use the "Arrow" symbol to show the direction in which the process flows in a flowchart.

━━━━━━━━ ▏▎▎ **IN THE LAB** ▎▎▏ ━━━━━━
Do it yourself.

Worksheet 2
(Based on chapters 3 & 4)

A. 1. This symbol is used to show a process or action step.

2. This symbol is used to show the direction in which the process flows.

3. This symbol is used to show a branch in the process.

4. This symbol is used to show the start and stop points of the flowchart.

B. 1. URL   2. Surfing   3. Telephone or cable line   4. web browser

C. 1. Gmail   2. Modem   3. WhatsApp

Test Sheet 1
(Based on chapters 1 to 4)

Section A

A. 1. (iii)   2. (ii)   3. (i)   4. (ii)   5. (iii)

6. (iii)   7. (i)   8. (i)

B.   1. IBM   2. folder   3. sub folder   4. downloading   5. network

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

        5. T   6. T

Section B

A.   1. Fourth generation computers

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

        3. Organised files and folders help us find the right files to use when we run a program.

        4. Instagram, Facebook and YouTube

B.   1. Steps to delete a file or folder:

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

        Step 2   Click on File or folder.

        Step 3   Click on Organize.

        Step 4   Click on Delete.

        Step 5   Click on Yes.

        2. Algorithm to check whether the given number is even or odd:

        Step 1   Start.

        Step 2   Read number and store them in A.

        Step 3   Check if A%2 == 0.

        Step 4   Print A is even or 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.

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5. Introduction to Scratch

EXERCISE

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

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

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

D.   1. You can create animations, quizzes and stories.

        2. Three components of Scratch desktop are Sprite, Script and Block menu.

        3. Motion block is used to control the movement of a Sprite.

E. 1. Steps to change the appearance of a sprite are:

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 colours of the cat and the outline.

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

Step 1   Click on 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. Type the name in the File name box.

Step 4   Click on the Save button.

F.   Click on the **Choose a Sprite** tool in the Sprites Info Pane and click on a desired sprite to add it to the project.

IN THE LAB

Do it yourself.

6. More Blocks in Scratch

EXERCISE

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

B.   1. Say   2. Go to   3. Sound   4. Move

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

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

2. This block stops all sounds being played on all sprites.

3. This block adds a **speech bubble** to the Sprite for the given time in seconds.

4. This **block** repeats a set of blocks for a given number of times.

E.   1. say...for...secs block is used to add a **speech bubble** to the Sprite for the given time in seconds.

2. •   when flag clicked block activates the script attached to this block when the Green flag or Go button is clicked.

•   when this sprite clicked block activates the script attached to this block when you click the sprite.

F. 1. The position of a sprite is given by the x and y values on the stage. Go to block is used to set the position of the sprite. So we can set the position of sprite using desired x and y values in the go to block.

2. Control blocks are used when the same blocks have to be repeated for a number of times. Two control blocks are repeat block and forever block.

G. 1. Steps to Switch Between Different Costumes for a Sprite:

Step 1   Ensure the sprite you want to animate is selected.

Step 2   Click on the Costumes tab for the selected sprite.

Step 3   Go to the Code tab and create a script to switch between costumes.

Step 4   Drag the next costume block into your script.

Step 5   If you want the sprite to directly switch to a specific costume (e.g., showing a happy face), use the "switch costume to [costume name]" block.

Step 6   Trigger the costume change based on certain events, such as:

- When a key is pressed.
- When a sprite is clicked.

2. go to block

Hands-On

Do it yourself.

IN THE LAB

Do it yourself.

Worksheet 3
(Based on chapters 5 & 6)

A. 1. Stage area   2. Algorithm   3. Go button   4. Scratch

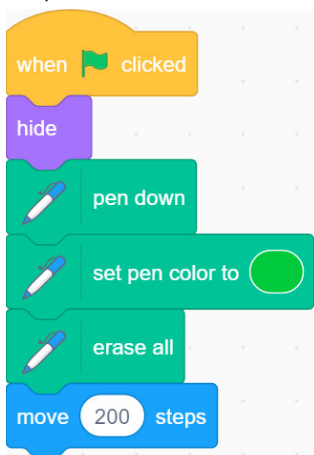**B.** 1. c   2. d   3. a   4. b

C. Do it yourself.

7. Creating Shapes in Scratch

EXERCISE

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

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

C. 1. Pen block draws a trail as the Sprite moves on the stage.

2. Steps to draws a line in Scratch:

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

Three polygon shapes are triangle, square and pentagon.

2. The main difference between drawing a square and a pentagon in Scratch is the number of steps used in script. In square we use Repeat 4 Move 100 Steps Turn 90 degrees whereas in pentagon we use Repeat 5 Move 100 Steps Turn 72 degrees.

E. 1. Sides 0

Degree 360

2. Sides 8

Degree 45

3. Sides 5

Degree 72

F. Vidhi needs to change the turn block to 40 degrees instead of 30.

Hands-On

Do it yourself.

IN THE LAB

Do it yourself.

8. Creating a Game in Scratch

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

B.   1. Hat   2. Sensing   3. Variables   4. Ask

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

D.   1. ask [ ] and wait, touching color [ ]? and key [space] pressed?

2. Sensing blocks in Scratch sense the input from the keyboard or the mouse at the time of execution of a script.

E.   1. Variable is an element that stores all the numbers, text, date or pictures that we use in a program.

To create variables in Scratch, follow the given steps:

Step 1   Click on **Variables** block category.

Step 2   Click on **Make a Variable** block. Type a variable name in the **New variable name** box.

Step 3   Click on the radio button of either of the options.

Click on For all sprites if you want this variable to appear for all the sprites.

Or

Click on **For this sprite only** if you want this variable to appear all the the sprites only. Here we have added the variable fruit. It will be available for all the sprites.

Step 4   Click Ok button.

2. Scratch has two conditional blocks. They are:

a. **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.

b. **If…then…..else block:** In this block if the condition is true, the blocks inside then condition will run. If the condition is false, the blocks inside else condition will run.

3. To add sensing blocks to the script, follow the given steps:

Step 1   Click on the **Sensing** block category in Tabs.

Step 2   Insert a sprite, Penguin2 on the stage. Delete the cat sprite.

Step 3   Add a new backdrop to the stage, Arctic.

Step 4   Now drag the **ask** block to the script area. Click on the block. A speech bubble appears above the penguin with the text, "What's your name?".

Step 5 To display the typed name also, click on the check box before the answer block. The answer appears on the stage.conditions.

F. 1. b   2. c   3. d   4. a   5. f

6. e

G. He will use conditional blocks in the game.

Hands-On

Do it yourself.

IN THE LAB

Do it yourself.

Worksheet 4
(Based on chapters 7 & 8)

A. 1. The repeat block is used to run a set of instructions for a specified number of times.

2. The forever block is used to run a set of instructions continuously until stopped.

3. This block displays a speech bubble with the specified text for the sprite that runs it, which appears on the screen for the specified number of seconds.

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

C.
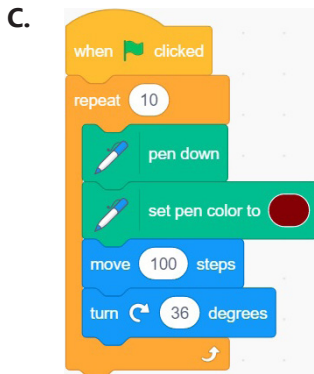
Test Sheet 2
(Based on chapters 5 to 8)

Section A

A. 1. (iii)   2. (ii)   3. (ii)   4. (iii)   5. (i)

B. 1. 360   2. regular   3. Hat   4. Forever

5. stage   6. yellow   7. backdrop

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

6. F 7. T 8. F 9. F

Section B

A. 1. Sprite, Stage, Script area and Menu bar

2. Sensing block is used to sense events.

3. Pen blocks draw a trail as the Sprite moves on the stage.

4. ask [What's your name?] and wait block and touching [mouse-pointer]? block

B. 1. Blocks are puzzle piece shapes that are used to give instructions to the computer.

(1) Looks blocks: These blocks control what your sprites and backdrop look like.

(2) Events Block: This is the topmost block. It helps run the script on the stage as it controls the starting of scripts. It gives you the control of all the blocks as without an event block no program will run.

2. Motion blocks are used to control the movement of a Sprite.

3. The main difference between drawing a square and a rectangle in Scratch is the number of steps used in script. In square we use Repeat 4 Move 100 Steps Turn 90 degrees whereas in rectangle we use Repeat 4 Move 200 Steps Turn 90 degrees Move 100 Steps Turn 90 degrees.

4. 'If...then' block checks only one condition whereas, 'If...then...else' block checks multiple conditions.