SCS Learning
Education Online

4

COMPUTER

A WONDER MACHINE

Includes AI

Aligned with NEP

TEACHER'S MANUAL

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Educational Publishers

Computer: A Wonder Machine

BOOK 4

Chapter 1

Computer—Storage and Memory Device

1. I-P-O Cycle

Working of a computer involves three steps—Input-Process-Output (I-P-O).

A computer processes raw data that we input and gives us the final data as output.

For example,

Input → 5 + 8

Process → Addition

Output → 13

2. Fill in the blanks:

(a) Information (b) Bytes

(c) Memory (d) Main

(e) Non-Volatile

3. Write the full forms of the following:

(a) ROM–Read-Only Memory

(b) RAM–Random-Access Memory

(c) I-P-O–Input-Process-Output

(d) HDD–Hard Disk Drive

(e) CD-RW–Compact Disc-Read Write

4. Differentiate between:

(a) RAM and ROM

RAM	ROM
Random-Access Memory	Read-Only Memory
Read and write both are allowed.	Only read is allowed.
Stores data, program and program result.	Stores permanent instructions for a computer.
This is a temporary storage area. It gets cleared as soon as the computer is switched OFF.	This is a permanent storage area and the instructions are not changed even when the computer is switched OFF.

(b) Internal Memory and External Memory

Internal Memory	External Memory
The computer CPU can directly access it.	The computer CPU cannot directly access it.
It is the main memory.	It is the backup memory.
Computer cannot run without the main memory.	Computer can run without the external memory.
It is faster than external memory.	It is slower than internal memory.
Example: ROM and RAM	Example: Hard disk, Pen drive, CD-RW, SD card, etc.

(c) Data and Information

Data	Information
Data is used as input for computer system.	Information is the output of the data.
Unprocessed facts	Processed data
Data is the raw material.	Information is the product.
Data: Entered numbers 2 and 5	Information: Result 7

5. Measuring Units

(a) 1 byte = 8 bits

(b) 1 KB (Kilobyte) = 1024 bytes

(c) 1 MB (Megabyte) = 1024 KB (Kilobytes)

(d) 1 GB (Gigabyte) = 1024 MB (Megabytes)

(e) 1 TB (Terabyte) = 1024 GB (Gigabytes)

6. Tick (✓) the correct option:

(a) (i) Input-Process-Output (b) (iii) ROM

(c) (iv) RAM (d) (ii) Instructions

(e) (i) Output

7. Application-based Questions

(a) SD Card: It stands for Secure Digital card. It is an ultra-small flash memory card. It is used in small portable devices like digital cameras.

(b) Data is stored permanently in external or secondary storage devices. For example, Hard Disk Drive, External Portable Hard Drive, etc.

(c) Hard Disk Drive

(d) Visual Display Unit (VDU)

(e) Pen Drive

Chapter 2
Tools of Word Processor

1. Fill in the blanks:

(a) Left, Right
(b) 1.08
(c) Justify
(d) Toggle
(e) Dialog box launcher

2. Tick (✓) the correct option:

(a) (ii) Left, Right, Justify, Center
(b) (iii) 1.08
(c) (iv) 
(d) (iv) F7
(e) (i) Backstage

3. Match the following:

(a) (iii) Select all the contents of the page.
(b) (iv) Selected text will change to bold.
(c) (v) Copy the selected text.
(d) (ii) Paste the copied text.
(e) (vii) Selected text will change to italics.
(f) (xi) Underline the selected text.
(g) (ix) New blank Word document opens.
(h) (x) Save the document.
(i) (xii) Cut the selected document.
(j) (viii) Redo the last action performed.
(k) (vi) Undo the last action performed.
(l) (i) Print the document.

4. Five important features of a Word processor are:

(i) Save
(ii) Edit
(iii) Auto correct
(iv) Format
(v) Spelling and Grammar check

7. Application-based Questions

(a) Font Group
(b) Ctrl + Z to undo action
(c) Proofing Group of Review Tab
(d) Paragraph Group of Home Tab
(e) Ctrl + S

Chapter 3
The Internet—Web Browser

1. Fill in the blanks:

(a) Web pages
(b) Internet
(c) Web browser
(d) Address bar
(e) Hyperlink

2. Tick (✓) the correct option:

(a) (iii) Uniform Resource Locator
(b) (i) World Wide Web
(c) (ii) Net surfing
(d) (iv) Google Search
(e) (iii) Search engine

3. Short notes:

(a) **Search engine**–A Search engine is a software that needs browser window to open. It searches for particular information when specific keywords are entered. It displays a Search textbox in which we can enter the keywords and a Google Search button for searching. All the related documents get listed in the search result window. For example, Google Search.

(b) **Web browser**–A web browser is a software application used for accessing information on the internet. We need to install a web browser on our computers. For example, Google Chrome.

(c) **ISP**–ISP provides the internet connection on our computer. It is similar to the cable operator giving cable connection on our TV. Some of the ISPs are VSNL, MTNL, AIRTEL, TATA, etc.

(d) **World Wide Web**–The World Wide Web (WWW) is a network of web pages that collects and stores the information. The term refers to all the interlinked web pages that can be accessed over the Internet.

6. Application-based Questions

(a) Computer, telephone line, modem, internet service provider and web browser

(b) Address bar, Back and Forward buttons, Refresh button, Tabs, Home button

(c) Search Engines

(d) Click on Star icon in the address bar

(e) Using links or by using tabs

Chapter 4
Presentation Software—An Introduction

1. Fill in the blanks:

(a) PowerPoint
(b) Slides
(c) Slide pane
(d) Design pane
(e) .pptx

2. Tick (✓) the correct option:

(a) (i) Layout
(b) (iv) Center pane
(c) (ii) Ctrl + O
(d) (iv) All of these
(e) (iv) All of these

3. Application-based Questions

(a) Left Pane
(b) Slides Group → New Slide
(c) Save As
(d) File → Open
(e) From Beginning

Chapter 5
Microsoft Publisher

1. Tick (✓) the correct option:

(a) (iv) All of these
(b) (iii) Page navigation
(c) (i) Quick Access Toolbar
(d) (iii) .pub
(e) (i) Currently displayed page

2. Publisher allows us to create:

- Brochures
- Business cards
- Greeting cards
- Flyers
- Invitations
- Address labels
- Certificates
- Booklets

4. Application-based Questions

(a) Latika can follow these steps to save her publication in the publishing software:

(i) Click File tab on the Ribbon to open Backstage view.

(ii) Click Save or Save As option on the left pane. A list of locations where we can save our documents is displayed on the right pane.

(iii) For saving the document on the same PC, click on Browse option the right pane.

(iv) Save As dialog box is displayed.

(v) In the File name textbox, type the name of the document. We can also add the name of the Author.

(vi) Click on Save button.

(vii) The file gets saved with .pub file extension.

(b) Rajesh can follow these steps to insert images into his publication using publishing software:

(i) Open the Publication.

(ii) Click on Insert menu.

(iii) Select Picture or Image option.

(iv) Click on Pictures or Online Pictures option to insert images.

(c) Sita can format the pictures in her publication document by following these steps:

(i) Click on the required picture. Format tab appears when the picture is selected.

(ii) Formatting can be done in many ways such as resize, cropping, add a Border, apply Effects, adjust Brightness & Contrast, change Picture Position or Wrap Text Around the Picture.

(iii) Finally, save the document.

(d) Reena can add comments below the images in her publication by following these steps:

(i) Click below the picture.

(ii) Insert a textbox by clicking on Insert menu and select Textbox and draw a box under the picture.

(iii) Type Comment inside the textbox.

(e) Shreya can open her existing document by following these steps:

(i) Open the publishing software.

(ii) Click on File menu.

(iii) Select Open option and choose the location where the file is saved.

(iv) Select the required document.

The document will now appear on the screen, ready to use.

Chapter 6
Features of File Management

1. Fill in the blanks:

(a) File explorer
(b) F2
(c) Contents
(d) Copy, Paste
(e) (i) Folder window (ii) Contents window (iii) Preview window

2. Tick (✓) the correct option:

(a) (i) File explorer
(b) (iv) All of these
(c) (i) Contents window
(d) (ii) Folders
(e) (ii) F2

3. Arrange the steps given under each statement in proper sequence:

(a) Renaming files and folders
  (i) Right click on the file or folder
  (ii) Click the Rename option from the shortcut menu.
  (iii) Type the new name.
  (iv) Press Enter key.

(b) Hiding a file or folder
  (i) Open File Explorer.
  (ii) Right click on file or folder.
  (iii) On the General tab, under Attributes column, check the Hidden checkbox.
  (iv) Click on Apply button.

(c) Moving a file or folder
  (i) Select the file or folder.
  (ii) Without releasing the button, drag the file or folder to the destination folder.
  (iii) Release the left mouse button on reaching the destination.
  (iv) The selected file or folder will be moved to the destination folder.

4. Write different ways in which you can do the following:

(a) Copy a file:
  (i) Left click on the file → Home tab → Organize group → Copy to option
  (ii) Right click on the file → Copy option from shortcut menu
  (iii) Left click on the file → Ctrl + C
  (iv) Left click on the file → Clipboard group → Home tab → Copy option

(b) Move a folder:

(i) Left click on the folder → Home tab → Organize group → Move to option

(ii) Left click on the folder → Drag the folder to the destination location → Release the mouse button

(c) Delete a file:

(i) Left click on the folder → Home tab → Organize group → Delete option

(ii) Right click on the file → Delete option from shortcut menu

(iii) Press Delete (Del) key on the keyboard.

(d) Rename a folder:

(i) Right click on the folder → Rename option from shortcut menu

(ii) Left click on the folder → Press F2 on the keyboard

(e) Hide a folder:

(i) Right click on it → Properties option → under attributes check Hidden checkbox.

5. Application-based Questions

(a) The steps are as follows:

(i) Right-click the file which is to be renamed, *i.e.*, Report.docx.

(ii) Left-click Rename option on the Ribbon.

(iii) Now type the new name, *i.e.*, Holiday Report 2024.docx, and press Enter key.

(b) Open the folder named Photos on the desktop and select file picture. Right-click on the file and select Copy option and paste in the created new folder, *i.e.*, Vacation Pics.

(c) (i) Select the file named OldNotes.txt.

(ii) Left-click on Delete option.

(iii) A delete File message box is displayed, requesting confirmation before deletion of the file. Click Yes button.

(d) (i) Open File Explorer window.

(ii) Click View option on the Ribbon.

(iii) Click on Show option on the submenu.

(iv) Select Hidden items option from the sub-submenu.

(e) Select the file named ProjectPresentation.pptx from Work Documents folder and drag the selected file and drop it in the subfolder named Presentations.

Chapter 7
Scratch Categories And Blocks

1. Answer the following questions:

(a) Sprites are the active objects on the stage. Scripts are created using the blocks to control the behaviour of these Sprites. The default Sprite available in the Scratch window is a cat.

(b) Programming language is a special language in which programs are written by programmers to perform specific tasks. Some examples of programming language are Java, Visual Basic, Python, etc

(c) Block palette includes the following categories:

1. Motion
2. Looks
3. Sound
4. Events
5. Control
6. Sensing
7. Operators
8. Variables
9. My Blocks

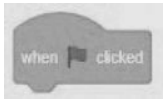
2. Complete the following chart:

Category	Color code	Number of block	Function
Motion	Medium Blue	Eighteen	Controls the motion of the sprite
Looks	Purple	Twenty	Controls the appearance of the sprite
Sound	Pink/Magenta	Nine	Controls the sound of the sprite
Events	Light Yellow	Eight	Each script we create will get executed only when we use an event block in the beginning
Control	Gold	Eleven	For inserting conditional statements, loops, repeats and pauses
Sensing	Cyan	Eighteen	Sensing blocks are used to detect keyboard and mouse movements
Operators	Light Green	Eighteen	Creates mathematical equations
Variables	Orange	Five	Creates and assigns values to the variables
Pen	Green	Nine	Used to draw on the stage

3. Match the following:

(a) (v) Medium Blue
(b) (i) Purple
(c) (vi) Pink/Magenta
(d) (ii) Light Yellow
(e) (vii) Gold
(f) (ix) Cyan
(g) (iii) Light Green
(h) (viii) Orange
(i) (iv) Green

4. Choose the correct option:

(a) (ii) 

(b) (ii) Green
(c) (ii) Control
(d) (ii) Control
(e) (iv) Pen

6. Application-based Questions

(a) To make a sprite move forward by 50 steps when the green flag is clicked in Scratch, he should use 'move ( ) steps' block from Motion category.

Steps to set it up:

(i) Go to Events category and drag 'when green flag clicked' block to the coding area.

(ii) Go to Motion category and find 'move (10) step' block. Drag it below the green flag block.

(iii) Click on the number 10 in the block and change it to 50.

(b) He should use 'change color effect by ( )' block from Looks category.

(c) Shreya should use 'play sound ( ) until don' block from Sound category.

(d) Sunil should use 'create clone of ( )' block from Control category.

(e) Siddharth should use blocks from Pen category in Scratch.

Chapter 8
Scratch Background and Sprites

1. Answer the following questions:

(a) The blocks are grouped under different categories. All blocks are listed and categorized into the following groups:

- Motion,
- Looks,
- Sound,
- Pen,
- Data,
- Events,
- Control,
- Sensing,
- Operators, and
- More blocks.

(b) (i) **Motion** – Moves sprites and changes angles.

(ii) **Looks** –

- Control the visuals of the sprites
- Attach speech or thought bubble
- Change of background
- Enlarge or shrink
- Transparency
- Add shades

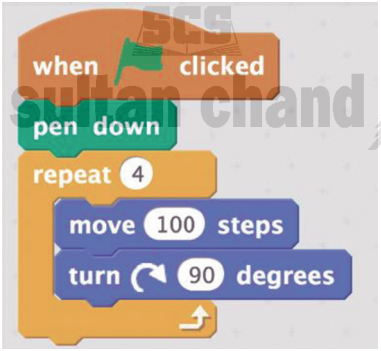
(iii) **Sound** – Plays audio files and programmable sequences.

(iv) **Pen** –

- Draws on the portrait by controlling pen width, colour and shade.
- Allows turtle graphics.

(v) **Control** – Conditional "if-else" statements, "forever", repeat and stop.

(c) When we want to repeat any block or blocks in a script for more than one time, we can use these blocks within the Repeat block. For example, we want to draw a square. Here, we are repeating move and turn blocks 4 times.



(d) Forever block is used to create an infinite loop. It is placed under Control block. This block can be only stopped by clicking Stop sign or when Stop All is activated or stop script is activated within the script. This is used quite often in Scratch programming because during animation an infinite loop is required at many places.

Forever-If is similar to Forever block with IF condition attached to it. It is used to create an infinite loop where it continuously checks for its Boolean condition. If the condition is true, the code within the loop will be executed and the script continues. But if the condition is false, nothing will happen till the condition is true again. The If condition is applied using blocks in Sensing block.

(e) Blocks are puzzle-piece shapes that are used to create code in Scratch. The blocks connect to each other vertically like a jigsaw puzzle, where each block (hat, stack, reporter, Boolean, or cap) has its own shape and a specially shaped slot for it to be inserted into, which prevents syntax errors. Series of connected blocks are called scripts.

2. Fill in the blanks:

(a) Stage, Sprites and Script
(b) X and Y
(c) Sound
(d) Sprite Library
(e) Backdrop
(f) Forever
(g) Stop sign or Stop All or Stop script
(h) Boolean

3. Write T for true and F for false statements:

(a) T	(b) F	(c) F	(d) T	(e) F
(f) T	(g) T	(h) T	(i) F	(j) F

4. Match the following:

(a) (v) Hat block

(b) (ii) Boolean block

(c) (iv) C block

(d) (iii) Stack block

(e) (vi) Reporter block

(f) (i) Cap block

5. Tick (✓) the correct option:

(a) (i) 3

(b) (i) Scripts

(c) (iii) Library

(d) (i) 

(e) (i) 

(f) (ii) Motion

(g) (i) Cap

(h) (iv) Stack

(i) (ii) 14

(j) (iii) Events

6. Application-based Questions

(a) Mia should explore Looks category in Scratch to change her sprite from a cat to a doll.

Steps to Add a New Image as a Sprite:

(i) In bottom-right corner of the Scratch screen, click 'Choose a Sprite' button (a cat face icon).

(ii) Select a doll sprite from the library.

OR

Click 'Upload Sprite' to add an image from the computer.

OR

Click 'Paint' to draw your own doll.

(b) Ria can add a forest background to the stage in Scratch by following these steps:

(i) Go to the Stage Area and click on the Stage (below the sprite area).

(ii) To choose a background, click 'Choose a Backdrop' button (a picture icon in the bottom-right corner) and then select 'Forest' from the backdrop library.

OR

Click 'Upload a Backdrop' to add an image from the computer.

OR

Click 'Pain' to draw a custom forest background.

(c) Shreya can use 'change y by ( )' block from Motion category to make her rocket move up when the green flag is clicked.

The steps are as follows:

(i) Go to Events section and drag 'when green flag clicked' block.

(ii) Go to Motion section and find 'change y by ( )' block.

(iii) Drag this block below the green flag block.

(iv) Change the number in the block to 50 (so the rocket moves up).

(d) Meenu should use Forever block from Control category to create an infinite loop and 'turn ( ) degree' block from Motion category to make the Sprite spin in circles.

Steps to set it up:

(i) Go to Events section and drag 'when green flag clicked' block.

(ii) Go to Control section and drag 'forever' block.

(iii) Go to Motion section and drag 'turn ( ) degrees' block inside Forever block.

(iv) Set the number to 15 (or any value) to control the spinning speed.

(e) Srishti should use 'pen down' block from Pen category.

Chapter 9
Need For Artificial Intelligence

1. Answer the following questions:

(a) We need AI in today's world because of the following reasons:

(i) It helps us to create software programs like voice assistance that can solve our day-to-day needs.

(ii) It reduces human error. For instance, robots being used to perform surgeries.

(iii) It works in dangerous places. For example, robots or drones being used in war zones.

(iv) It helps in repetitive tasks. For example, robots being used in the garment industry.

(v) It contributes in learning and helps students to improve and sharpen their skills.

(b) The advantages of artificial intelligence are as follows:

(i) AI-enabled machines are accurate and perform tasks very fast.

(ii) AI-enabled machines can perform a task with speed and accuracy, thus increasing productivity.

(iii) AI-enabled machines diagnose diseases much faster than doctors.

(iv) AI machines can be placed anywhere whereas humans cannot survive in extreme conditions/areas.

(v) AI-enabled machines can work continuously without getting tired or exhausted.

(vi) AI-enabled machines help in cost reduction.

(c) We can say that AI-enabled machines are accurate and perform tasks very fast because humans make mistakes. Therefore, we need to rely on these machines. For example, self-driving cars help in saving human lives by limiting the number of accidents.

2. Match the following:

(a) (iv) Alexa

(b) (v) Accurate

(c) (ii) Snapchat

(d) (i) Personalized

(e) (iii) is a machine

3. Fill in the blanks:

(a) Artificial Intelligence

(d) tired, exhausted

(c) cost

(d) personalization

(e) war zones, volcano-prone areas

5. Application-based Questions

(a) AI can help Alex with his school project in many ways, *e.g.*, find information about the school project, provide help in writing content, solve problems, etc.

(b) With the help of Smart Robots as Helpers.

(c) AI helps in repetitive tasks. In this case, the machines in a warehouse are programmed in such a way that the sorting of packages is done accurately on the basis of weight.

(d) Rule-based decision-making approach

(e) Self-driving car

Chapter 10
The Magic of Zoom

4. Application-based Questions

(a) Steps to use Zoom to create a virtual classroom are as follows:

(i) Open Zoom on the computer or mobile.

(ii) Click 'New Meeting' to start a class.

(iii) Share the meeting link with others so they can join.

(iv) Ask the students to turn on their video so everyone can see each other.

(v) Click 'Unmute All' so they can speak and listen.

(vi) Use Fun Zoom Tools such as Screen Share, Whiteboard, Chat Box, Raise Hand.

(b) (i) Start a Zoom meeting:

Open Zoom and click 'New Meeting' or 'Schedule'.

Share the meeting link with friends.

(ii) Allow everyone to talk and share:

Click 'Unmute All' so everyone can talk.

Click Share Screen → Allow All so friends can show their work.

(iii) Use Zoom tools for teamwork:

Screen Share: Show slides, notes or pictures.

Whiteboard: Draw and write ideas.

Chat: Send messages and links.

(c) Leo can check the status of his Zoom meeting in the following ways:

(i) Open Zoom and go to the Meetings tab.

(ii) If the meeting is ongoing, he will see 'Join' button. If it is scheduled for later, he will see the date and time.

(iii) Click the meeting link received. If the meeting has started, it will open. If not, Zoom will show the scheduled time or a message saying the host has not started it yet.

(iv) To confirm the status, ask the host, i.e., the teacher or organizer.

(d) By clicking on 'Record' at the bottom of the screen

(e) *https://www.zoom.us/download*