Class 8

Answer Key

Information Technology (Ver. 5.0)

1. Fundamentals of Computer

Tech Trivia

Section A (Objective)

A. 1. b. 2. b. 3. c. 4. c. 5. c. 6. b.
7. b. 8. c. 9. a. 10. c.

B. 1. Process 2. Light Pen 3. System Software 4. Output devices
5. Software 6. Restored 7. Solid State Drive 8. Barcode
9. Monitor 10. Folder

C. 1. iii. 2. iv. 3. ii. 4. v. 5. i.

D. 1. F 2. F 3. F 4. T 5. F 6. T
7. F 8. F

Answer Arcade

Section B (Subjective)

A. 1. Hybrid devices are gadgets that can do more than one thing. It can act as both an input and an output device.

2. A device driver is a specialised software that acts as an intermediary between the operating system and hardware devices, allowing the computer and the device (e.g., printers, scanners) to communicate effectively.

3. File Explorer, formerly known as Windows Explorer, is an application in the Windows operating system that provides access to all your computer's files and folders. It displays a list of files and subfolders within the selected folder, allowing you to open, copy, move, and delete them.

4. The two characteristics of a computer are as follows:

   - Speed: Computers can process information and perform calculations at incredibly high speeds, much faster than humans.

- Accuracy: Computers follow instructions exactly, making them highly accurate with minimal errors if the instructions are correct.

5. A byte consists of a group of eight bits, for example, 10001011, i.e., 1 byte equals 8 bits.

   Memory units in ascending order according to their size: KB < MB < GB < TB

B. 1.

Hardware	Software
The parts of a computer that we can see and touch are called hardware. All input, processing, output and storage devices form the hardware components of a computer system. The hardware components are divided into four groups: • Input Devices • Processing Device • Output Devices • Storage Devices For example, keyboard, mouse, monitor, etc.	Software is a set of instructions given to a computer to perform tasks. Computer software is broadly classified as: • System software • Application software For example, Windows, macOS, LibreOffice, Paint, etc.

2. The operating system acts as an intermediary between users and computer hardware, ensuring smooth communication and coordination of system resources like the CPU, memory, storage, input/output devices, and network connections.

   Examples include Windows, macOS, Linux, Unix, Android, and Ubuntu.

3. The CPU has three main parts:
   - ALU (Arithmetic Logic Unit): Handles basic math like addition and subtraction, and compares things like greater than or less than.
   - CU (Control Unit): Manages the flow of data, making sure it moves correctly between input, processing, and output, like a traffic controller.
   - MU (Memory Unit): It Stores data, both processed and unprocessed.

4. When shutting down a computer, the system provides several options, each serving a specific purpose:
   - Lock: This option locks the screen, requiring a password or PIN to unlock and resume work. It's useful if you want to step away briefly and keep your session and data secure.
   - Sleep: Puts your computer in a low-power state, saving your session as it is. When you wake the computer (usually by pressing a key or moving the mouse), it resumes quickly from where you left off.

- Shut down: Closes all programs and turns off the computer completely. Use this option if you won't be using your device for a while.

C. 1. This illustrates the importance of accurate input data in the IPO cycle because wrong input leads to incorrect output.

2. Samarth should use a drawing application to create the poster because these applications provide features like inserting shapes, colours, images, and text in a free-form layout, which are essential for creating attractive and well-designed posters. Whereas, a word processor like Microsoft Word is better suited for editing and printing text documents.

   Using the correct software ensures better results, saves time, and allows the user to utilise the full range of tools suited for that specific task.

3. Seema should use a spreadsheet software like Microsoft Excel, Google Sheets, or LibreOffice Calc.

4. Nitin should consider using a plotter.

Code Clues Page 40

1. RINGSTO → STORING
2. RELOXPER → EXPLORER
3. REDOLF → FOLDER
4. ROFMAT → FORMAT
5. STGEROA → STORAGE
6. RDIEV → DRIVE

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Do it yourself.

2. Algorithm and Flowchart

Tech Trivia

Section A (Objective)

A. 1. c. 2. b. 3. b. 4. b. 5. d. 6. a.
7. b. 8. b. 9. c.

B. 1. Diamond 2. True 3. Sequential 4. Control structure
5. Start

C. 1. ii. 2. iii. 3. v. 4. i. 5. iv.

D. 1. T 2. F 3. F 4. T 5. F 6. T
7. F 8. F

Answer Arcade

Section B (Subjective)

A. 1. Problem-solving is a fundamental skill that helps us find solutions to various challenges in everyday life and in fields like mathematics, science, and computer science. In programming, problem-solving often involves breaking down a task into smaller steps and creating a logical sequence to solve it.

2. Algorithm is important in computer programming because it provides a systematic way to identify and solve problems efficiently. Once we have an algorithm, we can translate it into a computer program in any programming language.

3. The three types of control structures are:
   - Sequential
   - Selection
   - Repetition

4. The two advantages of writing an algorithm are as follows:
   - It is a step-by-step representation of a solution to a given problem.
   - It uses simple English-like statements so that it is easy to understand and write.

5. A flowchart is a graphical representation of an algorithm. It makes use of symbols that are connected through arrows to show the direction of flow of information.

B. 1.

Algorithm	Flowchart
It is a step-by-step approach to solve a problem.	It is a step-by-step visual/graphical approach to solve a problem.
It is a Pseudocode (false code) of a program.	It is a graphical representation of a program.
Difficult to represent branching and looping.	Easily represents branching and looping through symbols.
Easy to find the errors.	Difficult to find the errors.
Can be used for simple, complex or long processes.	Advisable to use only for simple processes.

2. The advantages of flowcharts are as follows:
   - It has graphic symbols that are a better way of communication.
   - It is very effective in solving and analysing a problem.

- It is easy to convert a flowchart into a program in any programming language.
- It makes program or system maintenance easier.

3. Selection control structure allows the algorithm to make a decision based on a condition. If the condition is true, a certain block of instructions is executed. If the condition is false, an alternative block of instructions will be executed.

   While, Repetition control structure is used for looping, i.e., repeatedly executing a certain block of statements.

4. Some of the basic guidelines that we can follow while writing an algorithm are as follows:
   - It begins with the keyword "Start".
   - It is written using simple English-like statements.
   - It is usually presented in a step-by-step format, with or without step numbers.
   - It must terminate after a finite number of steps.

5. The diamond symbol indicates a question or branch in the process flow. It is used when there are 2 options (Yes/No).

   Example: Checking if the Age is greater than or equal to 18 for issuing a Driving License.

6. a. Step 1: Start

   Step 2: Input Selling Price (SP) and Cost Price (CP)

   Step 3: If SP > CP then
   ```
      Profit = SP - CP
      Display "Profit is", Profit
   Else if SP < CP then
      Loss = CP - SP
      Display "Loss is", Loss
   Else
      Display "No profit, No loss"
   ```
   Step 4: Stop

   b. Step 1: Start

   Step 2: Input NUM1, NUM2, and NUM3

   Step 3: Average = (NUM1 + NUM2 + NUM3) / 3

   Step 4: Display Average

   Step 5: Stop

   c. Step 1: Start

   Step 2: Input NUM

   Step 3: Square = NUM * NUM

Step 4: Display Square

Step 5: Stop

d. Step 1: Start

Step 2: Input Length (L) and Breadth (B)

Step 3: Area = L × B

Step 4: Perimeter = 2 × (L + B)

Step 5: Display Area and Perimeter

Step 6: Stop

C. 1. Step 1: Start

Step 2: Input Name

Step 3: Input marks in Subject1, Subject2, Subject3, Subject4, Subject5

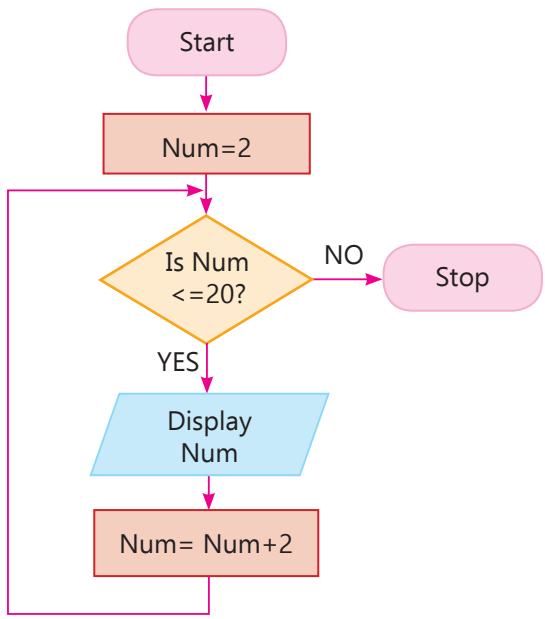
Step 4: Calculate Total = Subject1 + Subject2 + Subject3 + Subject4 + Subject5

Step 5: Calculate Average = Total / 5

Step 6: Display Name and Average

Step 7: Stop

2.



Code Clues Page 57

W	E	A	D	G	Y	J	F	F	D	G	J	F	V	D	H	J	M
G	H	S	X	B	M	O	Q	L	A	D	Z	F	H	K	M	F	B
D	C	V	B	N	A	L	G	O	R	I	T	H	M	X	C	B	N
X	V	F	H	B	J	N	K	W	S	C	G	B	M	J	M	W	Z
X	V	B	N	H	N	G	H	C	Q	R	Y	U	O	N	G	J	I
B	H	J	G	D	D	E	T	H	G	U	D	G	H	E	J	B	D
S	E	Q	U	E	N	T	I	A	L	R	T	Y	G	D	S	S	B
C	V	B	H	B	H	D	S	R	E	P	E	T	I	T	I	O	N
C	G	B	S	E	L	E	C	T	I	O	N	S	R	G	B	F	R
G	H	U	K	B	N	E	A	R	D	A	F	T	V	Y	H	U	D

Digital Drills Page 58

Do it yourself.

Test Sheet 1

(Based on units 1 & 2)

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

B. 1. Light Pen 2. System Software 3. True 4. Start

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

D. 1. A device driver is specialised software that acts as an intermediary between the operating system and hardware devices, allowing the computer and the device (e.g., printers, scanners) to communicate effectively.

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4. The three types of control structures in algorithm are as follows:
   - Sequential
   - Selection
   - Repetition

E. 1. The operating system acts as an intermediary between users and computer hardware, ensuring smooth communication and coordination of system resources like the CPU, memory, storage, input/output devices, and network connections.

   Examples include Windows, macOS, Linux, Unix, Android, Ubuntu.

2. When shutting down a computer, the system provides several options, each serving a specific purpose:
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3. Learning Scratch

Tech Trivia

Section A (Objective)

A. 1. b. 2. a. 3. a. 4. a. 5. a. 6. b.
7. c. 8. b. 9. d. 10. b. 11. C. 12. a.

B. 1. Stage 2. Sprites 3. Operator 4. Backgrounds
5. Program 6. Motion 7. Control 8. Clear

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

D. 1. T 2. F 3. T 4. F 5. T 6. T
7. F 8. T

Answer Arcade

Section B (Subjective)

A. 1. The default number of steps that a sprite moves forward is 10. Yes, the default number can be changed by specifying a different value.

2. The Costumes tab is used to change the appearance of a sprite by adding or editing its costumes.

3. A backdrop is the background of the Stage that sets the scene for the project. Yes, the user can change the backdrop using the Choose a Backdrop button.

B. 1. Follow the given steps to add a new sprite from Sprite library:

Step 1: Move the mouse pointer over the Choose a Sprite button.

Step 2: Click on the Choose a Sprite icon.

The sprite library will open. You can browse through different categories such as Animals, People, Fantasy, etc. or directly type the name of the sprite into search box.

Step 3: Click on the sprite you want to add. For example, click on Balloon 1. You will see that the selected sprite appears on the stage and in the sprite list at the bottom.

2. The 'say Hello!' block comes under the category of Looks block in Scratch. This block is used to make the sprite display a speech bubble with the specified text indefinitely.

3. a.

Pen Up	Pen Down
This block is used to pulls up Sprite's pen so that it won't draw when the Sprite moves.	This block is used to draws a line as the Sprite moves on the Stage.

b.

set pen color to ()	change pen color by ()
This block is used to sets the colour of the pen to a specific colour or number.	This block is used to changes the colour of the pen by a specific colour or a number.

c.

Repeat ()	repeat until ()
This block is used to repeats the blocks inside this loop a specified number of times.	This block is used to repeats the blocks inside this loop until the specified condition is true.

d.

Change pen size by ()	Set pen size to ()
This block is used to changes the thickness of the pen to a specific number.	This block is used to sets the thickness of the pen to a specific number.

4. A- Block Palette

   B- Stage Area

   C- Coding Area

   D- Sprites Pane

C. 1. Following are the steps to add a space background:

Step 1: Click on the Choose a Backdrop button. The Choose a Backdrop dialog box appears.

Step 2: Search a suitable backdrop related to space from the Backdrop Library.

Step 3: Click on the desired backdrop to add it to the Stage.

. 2. Aman should use the "play sound until done" block or "start sound" block from the Sound blocks category to add the music to the script.

Code Clues Page 93

1. Menu bar
2. Green flag
3. Coding Area
4. Title bar

Digital Drills Page 94

Do it yourself.

4. Cyber Security

Tech Trivia

Section A (Objective)

A. 1. a. 2. b. 3. c. 4. b. 5. b. 6. b.
7. d. 8. c. 9. b.

B. 1. CAN 2. Firewall 3. Malware
4. Antivirus Software 5. Trojan Horse 6. Local Area Network
7. Virus 8. Cyber Law 9. Homepage
10. IP Address

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

D. 1. T 2. T 3. F 4. T 5. F
6. T 7. F 8. F

Answer Arcade

Section B (Subjective)

A. 1. A PAN (Personal Area Network) is a network that connects devices within the personal range of an individual, such as smartphones, tablets, laptops, and wearable devices. Bluetooth and infrared are common technologies used for PANs.

2. The World Wide Web (commonly abbreviated as "the Web") is a system of interconnected hypertext documents accessed via Internet. With a web browser, one can view web pages that may contain text, images, videos, and other multimedia and navigate between them using hyperlinks.

3. You can also avoid getting spam messages by following the given steps:
   - Keep deleting spam messages on a regular basis.
   - Do not provide your email address to unknown websites or post publicly.
   - Avoid clicking on unknown links while browsing the Internet.

4. Phishing is a cybercrime where attackers deceive individuals into sharing sensitive information by pretending to be a trustworthy source. They often use emails, texts, or social media messages that seem to come from banks, social media platforms, or retailers.

5. Cyberbullying is a form of bullying that occurs through digital technologies. It can take place on any digital platform, like social media, messaging platforms, etc. It includes sending, posting, or sharing negative, harmful, or private information about someone else.

6. • Cyberbullying
   • Phishing
7. A Trojan Horse is a type of malware that enters your computer as a hidden program attached to a harmless file.

   For example, a backdoor Trojan allows an attacker to acquire remote access to control a computer for uploading, downloading, or executing data as and when needed.
8. VIRUS is an acronym for Vital Information Resource Under Seize. It is malicious software that is generally attached to a file. When this file enters your system, the virus will start infecting your computer.

   For example, the Melissa virus, released in 1999, was one of the first email-aware viruses.

B. 1. Some of the common types of networks are:
   - Campus Area Network (CAN): A CAN is a network that connects multiple LANs within a university campus, corporate campus, or industrial park. CANs provide high-speed connectivity and centralised management of resources across multiple locations.
   - Local Area Network (LAN): When the computers are interconnected within a limited distance then it becomes a Local Area Network (LAN). This relatively small area can be a single room, a floor, the school buildings or an office building or a factory.
   - Metropolitan Area Network (MAN): When the computers are interconnected within the same city, such as the branches located at different places in the same city then it becomes a Metropolitan Area Network(MAN). It is typically owned and operated by a single entity such as a government body or large corporation.
2. Some of the main reasons to connect the devices into networking are:
   - Sharing of Resources: The primary goal of computer networking is to share resources, such as printers, scanners, modems, etc. This enables efficient use of resources and reduces the need for duplicate equipment or software. For example, several PCs can be connected to a single printer.
   - Communication: Networking facilitates communication between individuals and groups through email, instant messaging, video conferencing, and other communication tools. This promotes real-time interaction, and enables remote collaboration among geographically dispersed teams.
3. A network is defined as a collection of computers and devices that are interconnected, allowing users to easily communicate and share important files, software, resources, and information as needed. Each computer in a network is called a node. The computers in the network may be linked through a cable, hub, switch, NIC (Network Interface Card), modem, or router.
4. Antivirus is needed to detect, prevent, and remove malicious programs from computers and protect them from virus attacks.

5. You can protect your computer from viruses by following the given precautions:
   - Install and use antivirus software.
   - Enable a firewall on your computer so that you can prevent unauthorised access to your system.
   - Only download software from trusted sources.
6. If your computer is infected with a virus, you may notice the following common symptoms:
   - The computer may run very slowly as it loses its processing speed.
   - There will be a change in the system file size.
   - An unusual increase in the number of files.
   - Unusual error message appears on the screen.
   - Computer restarts on its own in between.
   - Disk drives or disks become inaccessible.
   - An application or applications are not working correctly.
   - The computer locks up frequently or stops responding.
   - Dialog boxes and menus sometimes appear to be distorted.

C. 1. Local Area Network (LAN).
2. Spam.
3. Antivirus Software.
4. IP Address.

Code Clues Page 116

1. Local Area Network
2. Metropolitan Area Network
3. Wide Area Network
4. Internet Service Provider
5. Malware
6. World Wide Web
7. Wi-Fi

Digital Drills Page 117

Do it yourself.

Test Sheet 2

(Based on units 3 & 4)

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

B. 1. normal, full screen 2. Control 3. Homepage 4. Virus

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

D. 1. The Costumes tab is used to change the appearance of a sprite by adding or editing its costumes.

2. A backdrop is the background of the Stage that sets the scene for the project. Yes, the user can change the backdrop using the Choose a Backdrop button.

3. A PAN (Personal Area Network) is a network that connects devices within the personal range of an individual, such as smartphones, tablets, laptops, and wearable devices. Bluetooth and infrared are common technologies used for PANs.

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