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# TECHIE TOTS TEACHER'S HANDBOOK



Dear Sir / Madam,

Welcome to the Teacher's Handbook for "Techie Tots" – an innovative IT textbook designed to equip students from Grades 1 to 8 with essential digital literacy skills. This handbook is designed to support teachers in delivering engaging and effective IT instruction by providing:

- Clear learning objectives for each grade level.
- Curriculum-aligned lesson plans and activities.
- Assessment strategies to measure student progress.
- Tips for integrating technology into classroom instruction.
- Access to our Learning Management System (LMS) platform.

We understand that each classroom is unique, and the resources provided in this handbook can be adapted to meet the specific needs of your students and school environment. By fostering curiosity, creativity, and critical thinking skills, we aim to empower students to become confident users and creators of technology.

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# TECHIE TOTS

## SCHEME OF EXAMINATION

### TWO TERM SCHEME

BOOKS	TERM I	TERM II
	<b>LESSONS</b>	<b>LESSONS</b>
BOOK 1	1,2,3,4	5,6,7
BOOK 2	1,2,3,4	5,6,7
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BOOK 7	1,2,3,4	5,6,7,8
BOOK 8	1,2,3,4	5,6,7,8

Note: Questions for each terminal examination cover only the portions prescribed for it.

# TECHIE TOTS

## SCHEME OF EXAMINATION

### THREE TERM SCHEME

<b>BOOKS</b>	<b>TERM I LESSONS</b>	<b>TERM II LESSONS</b>	<b>TERM III LESSONS</b>
BOOK 1	1,2	3,4,5	6,7
BOOK 2	1,2	3,4,5	6,7
BOOK 3	1,2	3,4,5	6,7
BOOK 4	1,2	3,4,5	6,7
BOOK 5	1,2	3,4,5	6,7
BOOK 6	1,2,3	4,5,6	7,8
BOOK 7	1,2,3	4,5,6	7,8
BOOK 8	1,2,3	4,5,6	7,8

Note: Questions for each terminal examination cover only the portions prescribed for it.

### General Objectives

- To introduce the concept of natural and man-made things.
- To understand the purpose and function of machines.
- To enable them to understand Computer as a machine.

### Learning Outcomes

- Students can differentiate between natural things and man-made things.
- Students can recognize various types of machines and their functions.
- Students can tell about a different kind of machines.
- Students can tell the functionalities of a computer.

### Methodology

**Aim:** To introduce students to the concept of natural and man-made things, To get the knowledge that a computer is a machine.

**Strategy:** Begin the lesson by asking students to define natural and man-made things. Provide examples and discuss the differences between them. Introduce the concept of machines and explain their purpose in making work easier. The teacher will explain different types of machines on the basis of their use or the way they helpful to us.

**Expected Skills achieved by the learners:** Critical Thinking Skills and Technological Literacy.

### Lesson Activities:

#### A Fill in the blanks

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

#### B Write T for true and F for false

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

#### C Tick the correct option

1. Electricity    2. Easy                    3. Draw                    4. Calculator    5. Television

#### D Find out the odd one



#### E What comes next?

1.



2.



#### F Answer the following

- 1    1. Tree    2. Cat  
 2    Computer  
 3    Machine is a device, which is made by humans for their help.

**General Objectives:**

- To introduce them to the various areas where computers are used in daily life.
- To familiarize them with the diverse uses of computers in different fields.
- To enable them to identify different types of computers.

**Learning Outcomes:**

- Students can identify and describe different areas where computers are used, including homes, schools, offices, libraries, hospitals, banks, shops, and studios.
- Students can understand the specific uses of computers in each area, such as communication, entertainment, education, administration, accounting, design, healthcare, transportation, and banking.

**Methodology**

**Aim:** To engage students in interactive learning experiences to enhance their understanding of the uses of computers.

**Strategy:** Begin the lesson with a discussion on the importance of computers in daily life and introduce the areas where computers are commonly used. Use multimedia presentations, videos, and real-life examples to illustrate the diverse uses of computers in different fields.

**Expected Skills achieved by the learners:** Analytical Thinking, Communication Skills and Digital Literacy.

**Lesson Activities:****A Fill in the blanks**

1. Office      2. Hospital      3. Bills      4. Railway Station

**B Multiple choice questions**

1. Smart classroom      2. Scanning      3. Emigration      4. ATM

**C Match the following**

1. Hospital      2. Airport      3. Office      4. Home      5. Railway station

**D Write T for true and F for false**

1. T      2. F      3. T

**E Answer in one or two words**

1. Shop      2. Hospital      3. Bank      4. School

**F Answer the following**

1. Automated Teller Machine      2. Railway Station      3. Railway Station  
4. Emigration clearance , Air traffic control      5. Diagnosing diseases , Medical lab

**G Fill the Crossword**

1. Airport      2. Doctor      3. ATM      4. Hospital      5. Computer  
6. Printouts

**Assessment - 1**  
**(Based on chapters 1 and 2)**

**A Fill in the blanks with suitable words**

1. Computer                      2. Bill                      3. Calculator                      4. Railway Station

**B Multiple choice questions**

1. Electricity    2. Smart classroom    3. Emigration

**C Write T for true and F for false**

1. F    2. F    3. T    4. T

**D Answer the following**

1. Computer    2. Diagnosing diseases, Medical Lab                      3. Automated Teller Machine

**TT-I**

**3**

**MOUSE AND KEYBOARD**

**General Objectives:**

- To develop the interest of students in learning computers.
- To familiarize students with the fundamental components of a computer system, specifically the mouse and keyboard.
- To make them understand the uses of Mouse and Keyboard.
- To enable them to identify parts of a Mouse and its actions.

**Learning Outcomes:**

1. Students can identify and name the parts of a computer mouse.
2. Students can navigate and interact with a computer using a mouse, including moving the mouse pointer and clicking buttons.
3. Students can execute basic mouse actions such as single-click, double-click, dragging, right-click, and scrolling.
4. Students can tell about the features of a keyboard.
5. Students can identify different keys of keyboard and know its functions.

**Methodology**

**Aim:** To engage students in interactive learning activities to develop their understanding and proficiency in using the mouse and keyboard as essential computer input devices.

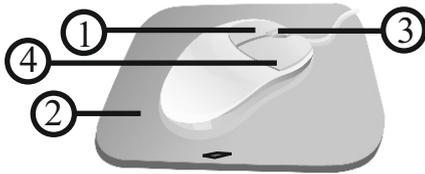
**Strategy:** Begin the lesson with a brief explanation of the importance of the mouse and keyboard in computer usage. Demonstrate how to hold a mouse correctly and perform various mouse actions. Allow students to observe and ask questions. Provide hands-on practice opportunities for students to practice using the mouse and keyboard under supervision. Engage students in interactive activities such as typing exercises, mouse-based games, and simulated computer tasks to reinforce learning.

**Expected Skills achieved by the learners:** Digital Literacy and Fine motor skills.

**Lesson Activities:**

## FUN TIME

Identify the following with suitable numbers



### A Fill in the blanks

1. Special Keys      2. Alphabetic Keys      4. Numeric Keys      5. Keyboard

### B Multiple choice questions

1. Scrolling    2. 26    3.     4. Enter key    5. 1

### C Rearrange the letters

1. Mouse      2. Wheel      3. Click

## Semester 1

(Based on chapters 1, 2 and 3)

### A Fill in the blanks with suitable letters

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

### B Rearrange the letters

1. MOUSE              2. WHEEL      3. CLICK

### C Write T for True and F for False

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

### D Multiple choice questions

1. ATM      2. Keyboard    3. 1

### E Match the following

1. Airport              2. Office              3. Hospital              4. Railway Station

### F Answer in one word

1. Computer              2. Mouse              3. Spacebar key              4. Delete key

TT-I

4

STARTING WITH PAINT

### General Objectives:

- To introduce students to the basics of using Microsoft Paint.
- To enable them to draw different shapes using Shapes group.
- To make them understand how they can close a paint window.
- To make them understand how they can save their work for future use.

### Learning Outcomes:

- Students can tell how to start Paint program.

- Students can tell parts of Paint program.
- Students can tell colours group of Paint.
- Students can tell different tools available in the Tools group.
- Students can tell how to save and close drawings.

**Methodology:**

**Aim:** To familiarize students with the Paint application interface and basic painting tools.

**Strategy:** Begin by introducing students to the Paint application and its purpose in digital painting. Guide students through the different parts of the Paint window, highlighting key features such as the canvas, toolbar, color palette, and Home tab. Provide demonstrations of each paint tool, including the Pencil, Eraser, Rectangle, Line, Oval, and Fill with Color tools, explaining their functions and how to use them. Allow students to practice using the paint tools on their own, encouraging experimentation and creativity.

**Expected Skills achieved by the learners:** Digital Literacy and Fine motor skills.

**Lesson Activities:**

**A Fill in the blanks with suitable words**

1. Tools group      2. Colours group      3. Draw pictures      4. Oval  
5. Start button      6. Tool box

**B Write T for true and F for false**

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

**C Multiple choice questions**

1.     2.     3.     4. 

**D Tick (✓) the correct one**

- 2      Start    →    Windows Accessories    →    Paint

**E Find out tools name**

R	A	L	I	N	E
E	S	R	I	E	N
C	O	V	A	L	E
T	P	E	N	C	P
A	N	R	L	A	E
N	C	A	E	G	N
G	L	S	C	E	C
L	C	E	I	L	I
E	A	R	C	I	L

**F Connect the tools with related angry birds**

-     
     
     
     
   
 ①                      ②                      ③                      ④                      ⑤

**General Objectives:**

To enhance students' cognitive abilities and critical thinking skills through activities aimed at improving numerical, visual, and analytical skills, developing problem-solving abilities, and fostering creativity and goal-setting.

**Learning Outcomes:**

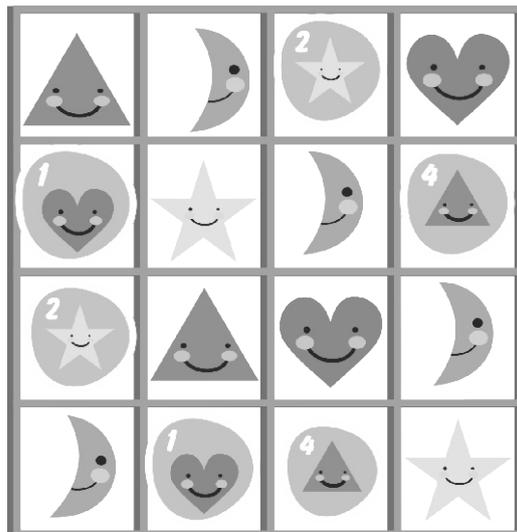
- Students can demonstrate improved numerical, visual, and analytical skills through participation in activities such as picture sudoku, puzzles, matching cards, identifying the odd one out, predicting what comes next, finding missing numbers, completing patterns, finding paths, and spotting differences between pictures.
- Students can apply problem-solving strategies to effectively tackle various challenges presented in the activities.
- Students can generate creative ideas and set achievable goals based on the outcomes of the activities.

**Methodology:**

**Aim:** To engage students in a variety of activities to enhance their logical reasoning skills and foster critical thinking abilities.

**Strategy:** Begin by introducing students the concept of logical reasoning and its importance in everyday life. Explain how logical reasoning skills can be developed through engaging activities. Choose a variety of activities from the provided list that align with the learning objectives. Demonstrate the first activity to the students, providing step-by-step instructions and modelling problem-solving strategies. Guide students in setting personal goals for improving their logical reasoning skills based on their performance in **the activities**.

**Expected Skills achieved by the learners:** Numerical, Visual & analytical skills and Problem-solving skills.

**Lesson Activities:****Picture sudoku**

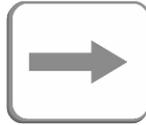
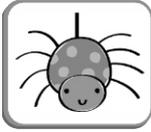
**Puzzle**

Ans )



4

**Match the cards**



**Odd one out**

1.



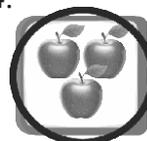
2.



3.



4.



5.



**What comes next?**

1.



2.



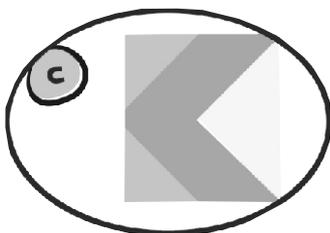
3.



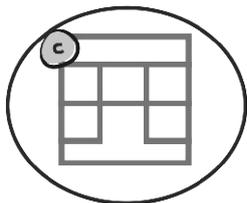
**Can you spot the odd one out?**



**Find the missing part from the given image**



Find the image which is similar to given X



How many?



- Three



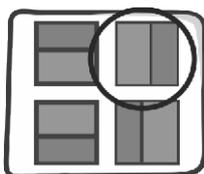
- Two



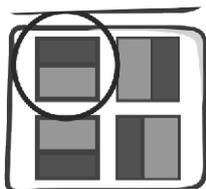
- Two

Which figure comes next?

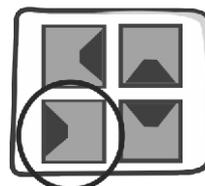
1.



2.



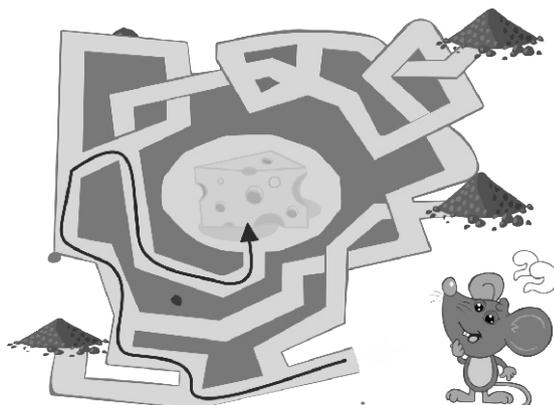
3.



Spot the differences between pictures



Find the path



## Fill in the missing patterns using stickers

1.



2.



3.



### ASSESSMENT - 2

(Based on chapters 5 and 6)

#### A fill in the blanks with suitable letters

1. Colours group    2. Oval    3. Draw pictures    4. Tool box

#### B Write T for True and F for False

1. T    2. F    3. F    4. F    5. T

#### C How many Squares, triangles, and rounds are in the picture?



- Three



- Two



- Two

TT-I

6

ARTIFICIAL INTELLIGENCE

#### General Objectives:

- To introduce students to the concept of intelligence and its manifestations in human and artificial forms.
- To familiarize students with the concept of Artificial Intelligence (AI) and its applications in daily life.

#### Learning Outcomes:

- Students will be able to explain the concept of intelligence and identify examples of human intelligence.
- Students will understand the definition and significance of Artificial Intelligence.
- Differentiate between human intelligence and artificial intelligence.
- Recognize the role of AI-powered devices and virtual assistants in modern society.
- Appreciate the contributions of pioneers like John McCarthy to the field of AI.

#### Methodology:

**Aim:** To introduce students to the concept of Artificial Intelligence (AI) and its applications in daily life.

**Strategy:** Begin the lesson by discussing the concept of intelligence and its various forms in

- human beings. Introduce the concept of Artificial Intelligence (AI) through interactive discussions and examples. Present examples of AI technology such as robots, virtual assistants, and drones to illustrate the applications of AI in different fields. Engage students in a discussion to compare and contrast human intelligence with artificial intelligence. Discuss the role of AI-powered devices and virtual assistants like Google Assistant, Siri, Alexa, etc., in daily life and how they utilize AI technology.

**Expected Skills achieved by the learners:** Cognitive skills and Problem-Solving Skills.

**Lesson Activities:**

**A Fill in the blanks with suitable words**

1. ALEXA    2. SIRI    3. John McCarthy    4. DRONE

**B Multiple choice question**

1. Machine Intelligence    2. Artificial Intelligence    3. Google Assistance  
4. Siri    5. Robot

**C Write T for True and F for False**

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

**D Answer the following**

1. Google Assistant is an artificial intelligence powered virtual assistant developed by Google.
2. Robot is a machine that does a job for us.
3. John McCarthy

**SEMESTER - 2**

**(Based on chapters 4, 5, and 6)**

**A Fill in the blanks with suitable words**

1. Tools group    2. Tool box    3. Drone    4. John McCarthy  
5. Paint    5. Eraser

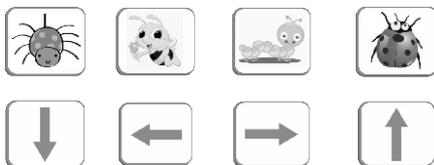
**B Write T for True and F for False**

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

**C Multiple choice questions**

1.     2. Siri

**D Match the cards**



**E Answer in one word**

1. Robot is a machine that does a job for us.
2. Oval
3. John McCarthy

**General Objectives:**

- To develop the interest of students in learning computers.
- To develop the interest of students in computer parts.
- To enable them to identify the purpose of computer parts.

**Learning Outcomes:**

- Students can identify and name the main parts of a computer.
- Students can recognize various types of machines and their functions.
- Students can talk about the function of the monitor, mouse, CPU, keyboard.
- Students can identify and name other peripheral devices commonly used with computers.

**Methodology:**

**Aim:** To familiarize students with the various parts of a computer and their functions through engaging and interactive activities.

**Strategy:** Begin the lesson with a story of computer and then share a brief discussion on the importance of computers in modern life. Present each part of the computer using visual aids such as diagrams or pictures, explaining their functions and characteristics. Engage students in hands-on activities where they can identify and label the different parts of a computer. Provide a practical demonstration of how each part of the computer works, using a computer if available.

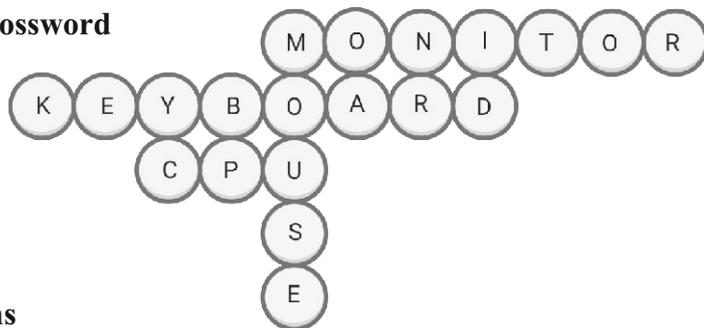
**Expected Skills achieved by the learners:** Critical Thinking Skills and Problem-solving skills.

**Lesson Activities:****A Fill in the blanks**

1. Rat    2. Brain    3. Television    4. Letters    5. Speaker

**B Write T for True and F for False**

1. F    2. T    3. T    4. T

**C Write letters to fill the crossword****D Multiple choice questions**

1. Keyboard    2. Speaker    3. Printer

**E Answer in one or two words**

1. CPU    2. Mouse    3. Charles Babbage

**General Objectives:**

- To familiarize students with the basic operation and navigation of a computer system, including switching it ON/OFF.
- To understand the desktop interface, and opening programs.
- To able to classify computer parts into input, output and processing devices.

**Learning Outcomes:**

- Students can identify the steps involved in switching ON and OFF a computer system.
- Students can describe the components of the desktop interface, including icons, taskbar, and start menu.
- Students can understand the significance of power buttons and indicator lights in operating a computer system.
- Students can classify each of the computer parts as input, output and processing devices.

**Methodology:**

**Aim:** To equip students with the essential skills needed to operate a computer system effectively.

**Strategy:** Begin the lesson by engaging students in a discussion about the importance of computers in everyday life and the various tasks they can perform. Introduce the concept of switching on and off a computer system by discussing the steps involved, using real-life examples and visuals. Provide a demonstration of the desktop interface, highlighting the different components such as icons, taskbar, and start menu. Introduce some of the computer parts and ask their functions. Classify them as input, output and processing devices.

**Expected Skills achieved by the learners:** Environmental Awareness, Digital Literacy, Critical Thinking skills.

**Lesson Activities:****A Fill in the blanks**

1. Taskbar    2. Shut down    3. Power button    4. Title bar    5. Start button    6. UPS

**B Write T for True and F for False**

1. F    2. T    3. T    4. F

**C Multiple choice questions**

1. Three    2. Input    3. Start menu    4. CPU

**D Match the following**

1. Display name of the program    2. Control button  
3. Small pictures on desktop    4. Thin bar at the bottom

**E Answer the following**

1. Desktop contains number of small pictures are called Icons.

2. Maximize and Restore
3. Type Paint in the search box, Then select the Paint option and a window will appear, now it ready to use.

**F Write the following**

In the given figure write the parts with suitable names.



**G Identify the following icons**

1. Start button
2. Power button
3. Maximize
4. Minimize
5. Close

**Assessment - 1**

(Based on chapters 1 and 2)

**A Fill in the blanks with suitable letters**

1. Brain
2. Television
3. Title bar
4. Letters

**B Write T for True and F for False**

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

**C Multiple choice questions**

1. Desktop
2. Printer
3. Speaker
4. Taskbar

**D Answer in one word**

1. Mouse
2. Charlse Babbage
3. Central Processing Unit

TT-II

3

**INTRODUCTION TO TUX PAINT**

**General Objectives:**

- To introduce students to Tux Paint, a software application for creating digital art.
- To familiarize students with the Tux Paint window interface and its components.
- To learn students about the various tools available in Tux Paint for drawing and editing images.
- To enable students to insert drawings and pictures using Tux Paint's features.

**Learning Outcomes:**

- Students can understand the layout and components of the Tux Paint window.
- Students can identify and describe the different tools available in Tux Paint.
- Students can insert drawings and pictures using the new tool and stamp tool, and adjust their size and orientation as needed.

- Students can utilize the magic tool to apply special effects and colours to drawings, enhancing their artistic creations.

**Methodology:**

**Aim:** To introduce students to Tux Paint and equip them with the necessary skills to create digital art using its tools and features.

**Strategy:** Begin by displaying the Tux Paint icon and explaining its significance as a drawing software. Guide students through the Tux Paint window interface, highlighting key components such as the workspace, toolbar, and selector. Introduce each tool available in Tux Paint, explaining its purpose and functionality through interactive demonstrations. Provide step-by-step instructions for using each tool, starting with basic actions like drawing lines and shapes and progressing to more advanced features like inserting drawings and applying special effects.

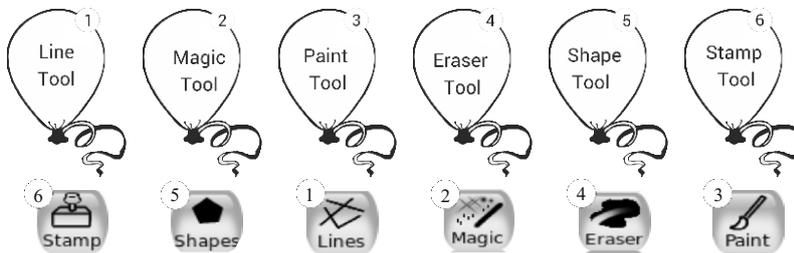
**Expected Skills achieved by the learners:** Creativity Skills & Fine motor skills.

**Lesson Activities:**

**A Fill in the blanks with suitable words**

1. Tux Paint      2. New tool      3. Paint tool      4. Fill tool

**B Connect with suitable balloon**



**C Answer the following**

- New tool and Stamp tool
- Magic tool is a collection of special effect tools used to fill colours and effects to your drawing.
- Magic tool, Fill tool and New tool

**Fun Time**

- a. Rectangle -4      b. Circle -5      c. Triangle -5      d. Start -6

**SEMESTER - 1**

**(Based on chapters 1,2 and 3)**

**A Fill in the blanks**

1. Rat      2. UPS      3. Speaker      4. Fill tool      5. Tux paint

**B Write T for True and F for False**

1. T    2. F    3. T    4. T    5. T

**C Multiple choice question**

1. Printer      2. New      3. CPU      4. Start Menu      5. Paint tool

**D Match the following**



**E Count the shapes**

- a. Rectangle-4      b. Circle-5      c. Triangle- 5      d. Star-6

**F Answer the following**

1. A scanner help you to import or scan your work and picture into the computer.
2. Maximize and Restore
3. Desktop contains number of small pictures are called Icons.
4. Printer, speaker and monitor.
5. Stamp tool, Shape tool and Magic tool.
6. The device used to give commands and enter data into the computer are called Input device.

TT-II

4

LOGICAL REASONING

**General Objectives:**

To enhance students' cognitive abilities and critical thinking skills through activities aimed at improving numerical, visual, and analytical skills, developing problem-solving abilities, and fostering creativity and goal-setting.

**Learning Outcomes:**

- Students can demonstrate improved numerical, visual, and analytical skills through participation in activities such as picture sudoku, puzzles, matching cards, identifying the odd one out, predicting what comes next, finding missing numbers, completing patterns, finding paths, and spotting differences between pictures.
- Students can apply problem-solving strategies to effectively tackle various challenges presented in the activities.
- Students can generate creative ideas and set achievable goals based on the outcomes of the activities.

**Methodology:**

**Aim:** To engage students in a variety of activities to enhance their logical reasoning skills and foster critical thinking abilities.

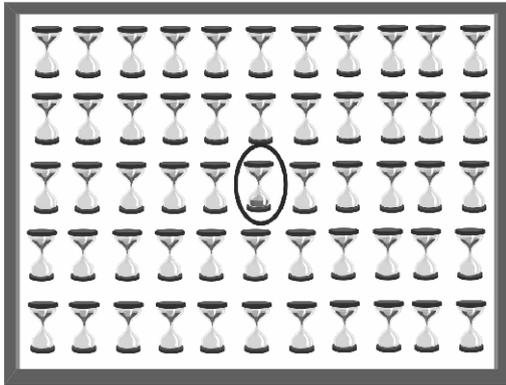
**Strategy:** Begin by introducing students the concept of logical reasoning and its importance in everyday life. Explain how logical reasoning skills can be developed through engaging activities. Choose a variety of activities from the provided list that align with the learning objectives. Demonstrate the first activity to the students, providing step-by-step instructions and modelling

problem-solving strategies. Guide students in setting personal goals for improving their logical reasoning skills based on their performance in the activities.

**Expected Skills achieved by the learners:** Numerical, Visual & analytical skills and Problem-solving skills.

**Lesson Activities:**

**A Find the odd one out**



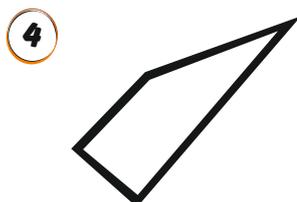
**B Find the missing part from the given image**



**C Identify the suitable images and write letters**



**D Which one of the following figure is hidden in the figure named X?**



**E Find the hidden object in this picture**



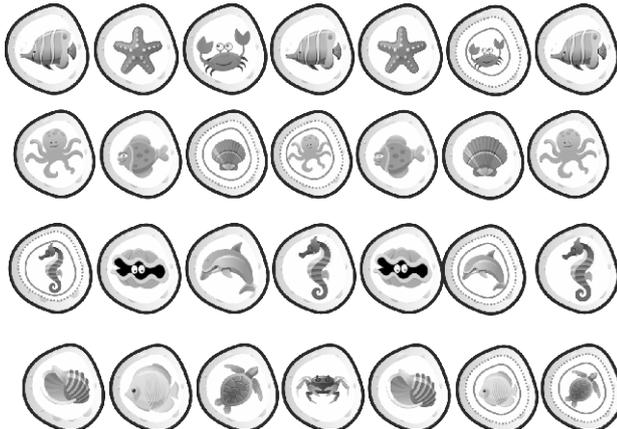
**F Select the appropriate shape for the blank cell**



**G Count and write the number of shapes in the given picture**



**H Complete the sequence by adding the missing figure from the list given below**



## I Find hidden words from the given picture



## K Sudoku

3	4	2	1
2	1	4	3
1	2	3	4
4	3	1	2

TT-II

5

INTRODUCTION TO SCRATCHJr

### General Objectives:

- To introduce students to the ScratchJr programming environment.
- To familiarize students with the basic components and features of ScratchJr.
- To enable students to create and save simple projects using ScratchJr.

### Learning Outcomes:

- To introduce students to the ScratchJr programming environment.
- To familiarize students with the basic components and features of ScratchJr.
- To enable students to create and save simple projects using ScratchJr.

### Methodology:

**Aim:** To provide students with an introduction to Scratch Jr programming environment and equip

them with basic skills to create and save simple projects.

**Strategy:** Begin the lesson with an overview of ScratchJr, explaining its purpose as a visual programming language for creating interactive stories, games, and animations. Introduce the Scratch window, highlighting its main components such as the stage, sprite area, blocks palette, and Coding area. Demonstrate how to navigate the Scratch interface, including how to select and manipulate sprites, navigate the stage, and access different menus and options. Guide students through the blocks palette, explaining the different categories of blocks available and their respective functions.

**Expected Skills achieved by the learners:** Computational Thinking, Problem-solving & Creativity skills.

**Lesson Activities:**

**A Fill in the blanks**

1. ScratchJr    2. Free    3. Triggering    4. six    5. Coding    6. New Background

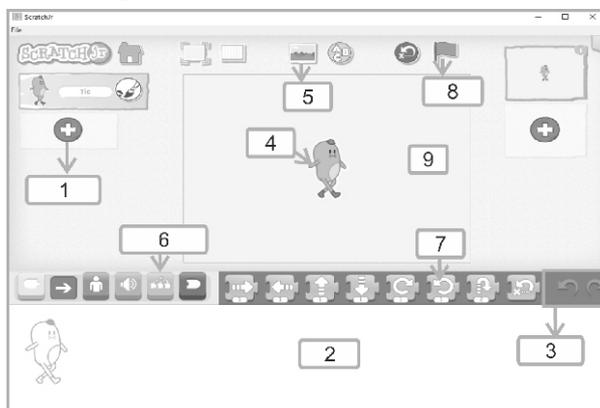
**B Multiple choice question**

1. Block Categories    2. Green Flag    3. Sound    4. Plus

**C Match the following**

1.     2.     3.     4.     5. 

**D Identify the components of ScratchJr window**



**E Answer the following**

1. ScratchJr is a type of block coding which is simple, easy to learn and available free of cost. It is easy to create games and animation.
2. Sprite, Stage, Green flag and Coding Area
3. Triggering blocks are yellow in colour. We can start different action using these blocks. The motion blocks are blue in colour. They help the sprite to move on the stage.
4. Click on New Background button. From the appeared window select the Background of your choice. Click on the tick sign to add the selected background.

**Assessment - 2**  
**(Based on chapters 4 and 5)**

**A Fill in the blanks with suitable letters**

1. c    2. a    3. b

**B Multiple choice questions**

1. Block Categories                      2. Green Flag

**C Match the following**

1.     2.     3. 

**D Select the appropriate shape for the blank cell**



**E Answer the following**

- ScratchJr is a type of block coding which is simple, easy to learn and Available free of cost. It is easy to create games and animation.
- Triggering blocks are yellow in colour. We can start different action using these blocks. The motion blocks are blue in colour. They helps the sprite to move on the stage.

**TT-II**

**6**

**AI AND ROBOTICS**

**General Objectives:**

- To introduce students to the concept of Artificial Intelligence (AI) and its applications in daily life.
- To familiarize students with various AI technologies and their impact on society.
- To encourage critical thinking and reflection on the role of AI in shaping the future.

**Learning Outcomes:**

- Students can define Artificial Intelligence (AI) and explain its significance in modern technology.
- Students can identify and describe common applications of AI in everyday life.
- Students can recognize the role of AI in addressing real-world problems and enhancing efficiency in various domains.

**Methodology:**

**Aim:** To engage students in active learning about Artificial Intelligence (AI) and its applications.

**Strategy:** Begin the lesson with a brief discussion on human intelligence and introduce the concept of Artificial Intelligence (AI) as the intelligence exhibited by machines. Use multimedia resources, videos, and real-life examples to illustrate the diverse applications of AI, including robotics, chatbots, self-driving cars, climate prediction, and personalized recommendations.

**Expected Skills achieved by the learners:** Critical Thinking and Problem-Solving Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Sophia    2. Aibo    3. Chatbot    4. Robots    5. Youtube  
6. Robotic Engineering

**B Write T for True and F for false**

1. F    2. T    3. F    4. F    5.

**C Match the following**



Sophia



Chatbots



Self Driving Car

**D Rearrange the jumbled words**

1. KURI    2. AIBO    3. ROBOT

**E Answer the following**

1. Chatbot is a software application used to conduct an online chat conversation via text or text to speech.
2. Robot is a machine resembling a human being and able to replicate certain human movements and functions automatically.
3. Artificial Intelligence is intelligence of machines, that allows them to perform some tasks which requires intelligence.
4. Sophia, Kuri, and Aibo
5. Robot, Chatbot, and self driving car

**SEMESTER - 2**

(Based on chapters 4,5 and 6)

**A Fill in the blanks**

1. Aibo    2. Youtube    3. ScratchJr    4. New Background    5. Coding

**B Rearrange the jumbled words**

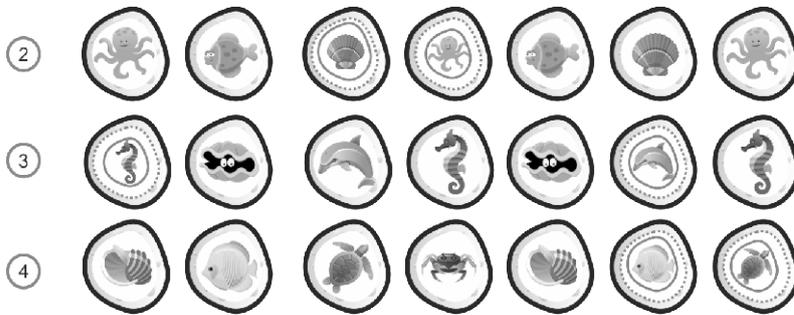
1. Kuri    2. Aibo    3. Robot    4. Sophia

**C Multiple choice question**

1. Saudi Arabia    2. Sound    3. Plus    4. Chatbot

**D Complete the sequence by adding the missing figure from the list given below**





**E Sudoku**

3	4	2	1
2	1	4	3
1	2	3	4
4	3	1	2

**F Answer the following**

1. Robot is a machine resembling a human being and able to replicate certain human movements and functions automatically.
2. Artificial Intelligence is intelligence of machines, that allows them to perform some tasks which requires intelligence.
3. Sprite, Stage, Green flag and Coding Area

**TT-III 1 SOFTWARE AND HARDWARE**

**General Objectives:**

- To familiarize students with computer hardware components.
- To introduce students to software and its types.
- To familiarize students with the basic features and functionalities of Windows 11.
- To teach students how to work with applications and manage multiple programs simultaneously.

**Learning Outcomes:**

- Students can identify and describe various computer hardware components.
- Students can define software and differentiate between application and system software.
- Students can identify and explain the components of the Windows 11 desktop, including icons, taskbar, and start menu.
- Students can demonstrate the ability to open, navigate, and close applications in Windows 11.
- Students can utilize basic features of specific applications such as Calculator and Windows Media Player.

## Methodology:

**Aim:** To provide students with a comprehensive understanding of computer hardware and software, to introduce students to the Windows 11 operating system and familiarize them with its basic functionalities.

**Strategy:** Begin the lesson with a discussion on the importance of computer hardware and software in everyday life. Present each hardware component with visual aids to aid understanding. Engage students in interactive activities such as identifying hardware components on a computer system diagram. Discuss the importance of operating systems and introduce Windows 11. Demonstrate the key features of Windows 11, including the Start Menu, Taskbar, Desktop, and icons, using a multimedia presentation.

**Expected Skills achieved by the learners:** Critical Thinking Skills and Technological Literacy.

## Lesson Activities:

### A Fill in the blanks

1. Maximize
2. Operating System
3. Windows Key
4. Application
5. Taskbar
6. Instruction

### B Write T for True and F for False

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

### C Identify the Following

1. Recycle Bin
2. This PC
3. Paint
4. Network
5. Close button

### D Multiple choice questions

1. Task View
2. Center or Left
3. Desktop
4. Bottom
5. Restore

### E Match the following

1. 
2. 
3. 
4. 

### F Fill the crossword

1. Taskbar
2. Close
3. Desktop
4. Restore
5. Desktop

### G Match the following

1. 
2. 
3. 
4. 

### H Answer the following

1. An Application Software is used to perform specific work for user such as play games, draw pictures, write notes etc.
2. Minimize button is used to minimize the windows to the taskbar. Maximize button is used to enlarge the window to its full size.
3. Click on the Search icon located on the taskbar. in the search bar, type Calculator and press Enter key. click on the calculator app in the Search result to open it.
4. Desktop contains a number of small pictures called Icons.
5. Operating System acts as a mediator between user and computer.

## I Find out the Odd one

1. Monitor

2. Keyboard

3. Windows

TT-III

2

MICROSOFT WORD 2019

### General Objectives:

- To introduce students to Microsoft Word 2019 and its significance as a word processing application.
- To enable students to create, edit, format and print documents using Microsoft Word 2019.
- To familiarize students with the various tools and features available in Microsoft Word 2019.

### Learning Outcomes:

- Students can navigate the Microsoft Word 2019 interface effectively.
- Students can create new documents using Microsoft Word 2019.
- Students can open existing documents and save new ones in Microsoft Word 2019.
- Students can utilize basic formatting tools such as font styles, sizes and alignments in Microsoft Word 2019.
- Students can preview and print documents using Microsoft Word 2019.

### Methodology:

**Aim:** To equip students with the necessary skills to utilize Microsoft Word 2019 for word processing tasks efficiently.

**Strategy:** Begin by discussing the importance of word processing applications and introduce Microsoft Word 2019 as a widely used tool. Demonstrate the key features and tools of Microsoft Word 2019 using visual aids and examples. Provide students with computers equipped with Microsoft Word 2019 and guide them through practical exercises to create, edit and format documents.

**Expected Skills achieved by the learners:** Digital Literacy and Communication Skills.

### Lesson Activities:

#### A Fill in the blanks

1. Print preview appears on the ..... side of backstage view. ans) Right
2. Start
3. Documents
4. .docx
5. Pin a document button

#### B State whether True or False

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

#### C Multiple choice questions

1. Ctrl+N
2. Save
3. Template
4. Ctrl+P

#### D Identify the icons



**E Match the following**

1. Create a new document
2. Save the document
3. Open a file
4. Print the document

**F Write the various parts of MS Word 2019 window**

1. Ribbon
2. Tell Me
3. Title Bar
4. Share Button
5. Ruler Bar
6. Workspace
7. Scroll Bar
8. Status Bar
9. Zoom Control

**G Answer the following**

1. click on the file tab. Then click on the close button. Now the screen will disappear.
2. Word Processor is an application software used for Writing, Editing, Formatting and Printing documents.
3. To create a new document follow the given steps. Click on the File tab on the Title bar. Click on the new option from the Backstage view. Select a Blank document.
4. Template is a pre-designed document style to create a new document quickly.

**Assessment - 1**  
**(Based on chapters 1 and 2)**

**A Fill in the blanks**

1. Maximize
2. Operating system
3. Document
4. Ctrl+P

**B Write T for True and F for False**

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

**C Multiple choice questions**

1. Task View
2. Template

**D Answer the following**

1. An Application Software is used to perform specific work for user such as play games, draw pictures, write notes etc.
2. Word Processor is an application software used for Writing, Editing, Formatting and Printing documents.
3. Desktop contains a number of small pictures called Icons.

**General Objectives:**

- To introduce students to the fundamentals of Paint 3D software.
- To familiarize students with the various uses and applications of Paint 3D.
- To enable students to understand and utilize important features within Paint 3D effectively.

**Learning Outcomes:**

- Students can navigate and operate Paint 3D software proficiently.
- Students can identify and explain various uses of Paint 3D in digital art and design.
- Students can demonstrate competence in utilizing important features of Paint 3D to

create and manipulate 3D models and artwork.

**Methodology:**

**Aim:** To equip students with foundational skills in using Paint 3D for digital art and design.

**Strategy:** Begin the lesson with an introduction to Paint 3D, explaining its purpose and significance in digital art and design. Provide a demonstration of how to access and navigate Paint 3D interface, including tools, menus, and workspace. Present various use cases and applications of Paint 3D, such as creating 3D models, designing digital artwork, and enhancing presentations.

**Expected Skills achieved by the learners:** Creativity skills, Fine motor skills

**Lesson Activities:**

**A Fill in the blanks**

1. Fill      2. Text      3. Brushes      4. Plus(+)

**B Write T for True and F for False**

1. F      2. T      3. F      4. T

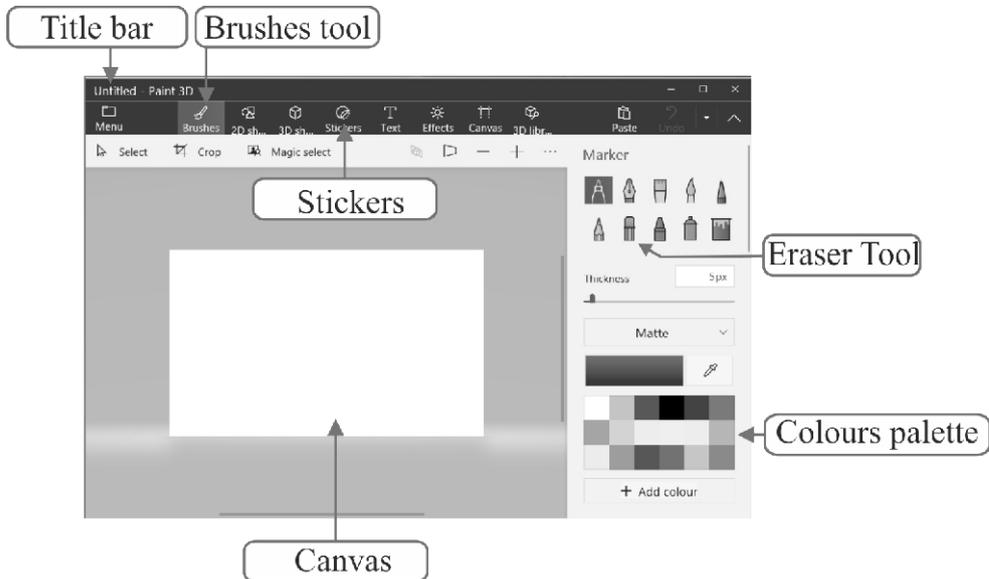
**C Multiple choice questions**

1. Title bar      2. 3D      3. Brushes      4. Canvas

**D Match the following**

1.       2.       3.       4. 

**E Write the following part of the Paint 3D Window**



**F Answer the following**

1. To create colourful pictures, To improve various images, To insert stickers, textures and shapes, and To change the canvas scene.
2. A dotted boundary around the shape can be seen which are called Grab Points.
3. Brushes tool is used for freehand drawing.

**General Objectives:**

- To introduce students to the concept and uses of the Internet.
- To familiarize students with basic Internet terminology.
- To teach students about email and email addresses.
- To instruct students on how to conduct Internet searches effectively.

**Learning Outcomes:**

- Students can explain the various uses of the Internet in modern society.
- Students can define and differentiate between various Internet-related terms such as website, email, URL, etc.
- Students can describe the purpose and structure of an email address.
- Students can demonstrate the ability to conduct basic Internet searches using a web browser.

**Methodology:**

**Aim:** To provide students with a foundational understanding of the Internet, its uses, and basic Internet skills.

**Strategy:** The lesson will utilize a combination of lecture-based instruction, interactive discussions, hands-on activities, and multimedia presentations to engage students and facilitate learning.

**Expected Skills achieved by the learners:** Communication and Digital Literacy Skills.

**Lesson Activities:****A Fill in the blanks**

1. Internet      2. URL      3. Web browser      4. Search Engine      5. Home page

**B Write T for True and F for False**

1. T    2. T    3. F    4. F    5. T

**C Match the following**

1. BSNL    2. gmail.com    3. Google    4. Web Browser    5. Website    6. ARPANET

**D Multiple choice questions**

1. Internet    2. E-mail    3. Edge    4. Hyperlink

**E Answer the following**

1. A website is a collection of web pages. It provides information about persons, businesses, organisation, institutes etc.
2. Microsoft edge is a web browsing software for using internet.
3. World wide web is a collection of inter connected pages that contains text, pictures, audio and movies. it contains millions of websites with interlinked documents of information.
4. Email is the most popular feature of the internet. It is used to send documents, pictures and videos. It is a very fast, easy and economical media for sending or receiving messages

around the world.

5. Search engine is a computer program used to search information on the web. Search engine helps us to search website, images, audios and videos. It is also used to find information about people, places, businesses, organizations, institutes etc.
6. Web browser is an application software used to open websites. It helps you to view web pages containing information, document, images, audios and videos, animation movies.

**F Identify the icons**

1. Edge
2. Google chrome
3. Gmail
4. Mozilla firefox

**SEMESTER - 1**

**(Based on chapters 1,2,3 and 4)**

**A Fill in the blanks**

1. .docx
2. Instruction
3. Home page
4. Stamp
5. Document

**B Write T for True and F for False**

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

**C Match the following**

1. gmail.com
2. To open a document
3. Google
4. To save a document
5. BSNL
6. To create a new document

**D Multiple choice questions**

1. Task View
2. Brushes
3. Template
4. Internet

**E Answer the following**

1. Operating System acts as a mediator between user and computer.
2. Template is a pre-designed document style to create a new document quickly.
3. Search engine is a computer program used to search information on the web. Search engine helps us to search website, images, audios and videos. It is also used to find information about people, places, businesses, organizations, institutes etc.
4. A dotted boundary around the shape can be seen which are called Grab Points.
5. Minimize button is used to minimize the windows to the taskbar. Maximize button is used to enlarge the window to its full size.

**General Objectives:**

- To introduce students to the Scratch 3 programming environment.
- To familiarize students with the basic components and features of Scratch 3.
- To enable students to create and save simple projects using Scratch 3.

**Learning Outcomes:**

- To introduce students to the Scratch 3 programming environment.
- To familiarize students with the basic components and features of Scratch 3.

- To enable students to create and save simple projects using Scratch 3.

**Methodology:**

**Aim:** To provide students with an introduction to Scratch 3 programming environment and equip them with basic skills to create and save simple projects.

**Strategy:** Begin the lesson with an overview of Scratch 3, explaining its purpose as a visual programming language for creating interactive stories, games, and animations. Introduce the Scratch window, highlighting its main components such as the stage, sprite area, blocks palette, and scripts area. Demonstrate how to navigate the Scratch interface, including how to select and manipulate sprites, navigate the stage, and access different menus and options. Guide students through the blocks palette, explaining the different categories of blocks available and their respective functions.

**Expected skills achieved by the learners:** Computational Thinking, Problem-solving & Creativity skills.

**Lesson Activities:**

**A Fill in the blanks**

- Programming language
- Scratch
- Sprite
- Extension button
- Stamp

**B Write T for True and F for False**

- F
- T
- F
- T
- T

**C Name the parts of the Scratch window**

- Code Area
- Stage
- Start/Stop
- Sprite
- Full screen mode
- Blocks Palette
- Code/Costume/Sound Tab

**D Multiple choice questions**

- Stage
- Motion block
- 
- Cat

**E Match the following**

- 
- 
- 
- 
- 

**F Answer the following**

- Scratch is a multimedia programming language used to create games, animated stories and projects by simply Dragging and Dropping.
- The pen is a feature in Scratch that allows a Sprite to draw shapes, plot colored pixels and so forth on the screen with the Pen Blocks.
- Code Area is the place where you write step-wise instruction for Sprite to do a particular task.

**General Objectives:**

To enhance students' cognitive abilities and critical thinking skills through activities aimed at improving numerical, visual, and analytical skills, developing problem-solving abilities, and fostering creativity and goal-setting.

**Learning Outcomes:**

- Students can demonstrate improved numerical, visual, and analytical skills through participation in various activities.
- Students can apply problem-solving strategies to effectively tackle various challenges presented in the activities.
- Students can generate creative ideas and set achievable goals based on the outcomes of the activities.

**Methodology:**

**Aim:** To engage students in a variety of activities to enhance their logical reasoning skills and foster critical thinking abilities.

**Strategy:** Begin by introducing students the concept of logical reasoning and its importance in everyday life. Explain how logical reasoning skills can be developed through engaging activities. Choose a variety of activities from the provided list that align with the learning objectives. Demonstrate the first activity to the students, providing step-by-step instructions and modelling problem-solving strategies. Guide students in setting personal goals for improving their logical reasoning skills based on their performance in the activities.

**Expected skills achieved by the learners:** Numerical, Visual & analytical skills and Problem-solving skills.

**Lesson Activities:**

A 3

B 3

C 

D Fig D

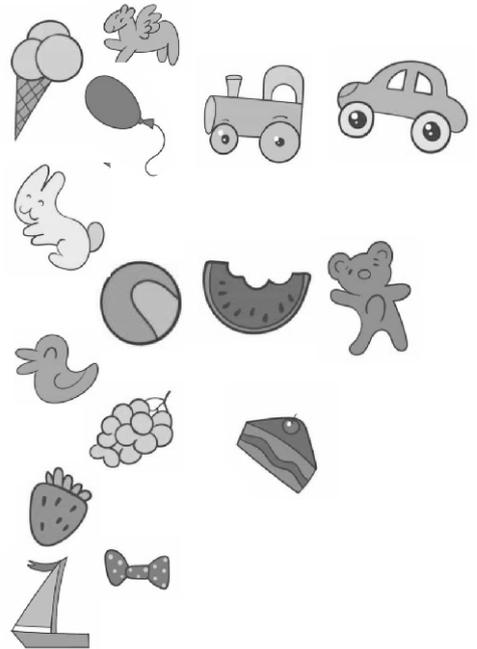
E 1. 2                      2. 20                      3. 9

F 15

G H 

Mirror	Card	Tiles	Straw	Couch	Cord
--------	------	-------	-------	-------	------

I



**Assessment - 2**  
**(Based on chapters 5 and 6)**

**A Fill in the blanks**

1. Programming Language                      2. Extension button                      3. Script

**B Write T for True and F for False**

1. F    2. F    3. T

**C Multiple choice questions**

1. Stage            2. Cat

**D Answer the following**

1. Code Area is the place where you write step-wise instruction for Sprite to do a particular task.
2. The pen is a feature in Scratch that allows a Sprite to draw shapes, plot colored pixels and so forth on the screen with the Pen Blocks.



**General Objectives:**

- To introduce students to the concept of Artificial Intelligence (AI) and its features.
- To familiarize students with the advantages and disadvantages of AI.
- To stimulate critical thinking about the role of AI in society and its impact on various aspects of human life.

**Learning Outcomes:**

- Students can define the concept of Artificial Intelligence and explain its key features.
- Students can identify and discuss the advantages and disadvantages of AI in different contexts.
- Students can critically evaluate the implications of AI on society, economy, and employment.

**Methodology:**

**Aim:** To provide students with a foundational understanding of Artificial Intelligence, including its features, advantages, and disadvantages, and encourage critical thinking about its impact on society.

**Strategy:** Begin the lesson by defining Artificial Intelligence and explaining its significance in modern technology. Provide examples of AI applications in everyday life, such as virtual assistants, recommendation systems, and autonomous vehicles. Explain the key features of AI. Discuss the advantages & disadvantages of AI.

**Expected skills achieved by the learners:** Critical Thinking, Ethical Reasoning & Problem-solving skills.

**Lesson Activities:****A Fill in the blanks**

1. Repeated
2. Machine Intelligence
3. Machine
4. Machines
5. Deep blue
6. Adapt
7. Google home

**B Write T for True and F for False**

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

**C Match the following**

1. Chess
2. Reduction of Error
3. No emotions
4. Humanoid Robot
5. Human

**D Find out the following**

**E Answer the following**

- 1 a. Handling repetitive job    b. Reduction of errors
- 2 AI can Sense, AI can Act, AI can Reason and AI can Adapt.
- 3 Artificial Intelligence is the intelligence of machine that allows them to perform some tasks which require intelligence.
- 4 a. AI -enabled machines incur heavy cost    b. AI-enabled machine may kill job employments.

**SEMESTER - 2**

**(Based on chapters 5,6 and 7)**

**A Fill in the blanks**

1. Scratch    2. Stamp    3. Adapt    4. Machine    5. Repeated

**B Multiple choice questions**

1. Blocks palette    2.     3. Pen down    4. Cortana

**C Write T for True and F for False**

1. F    2. T    3. F    4. T

**D Match the following**

1.     2.     3. Human    4. Reduction of Error

**E Answer the following**

1. AI can Sense, AI can Act, AI can Reason and AI can Adapt.
2. The pen is a feature in Scratch that allows a Sprite to draw shapes, plot coloured pixels and so forth on the screen with the Pen Blocks.
3. The Stamp Block is used to create duplicate copy of the Sprite.
4. Artificial Intelligence is the intelligence of machine that allows them to perform some tasks which require intelligence.

**F What come next?**

9

TT-IV

1

**APPLICATION OF INTERNET**

**General Objectives:**

- To understand the role and significance of the Internet in various aspects of life.
- To explore the applications of the Internet in education, e-commerce and artificial intelligence.
- To recognize the impact of the Internet on society and individual lives.

**Learning Outcomes:**

- Students can describe the function and structure of the Internet.
- Students can explain the importance of the Internet in education, including access to information, online research, e-learning and distance learning.

- Students can discuss the role of the Internet in e-commerce, including different types of e-commerce business models and applications such as e-shopping, e-banking, and m-commerce.
- Students can identify applications of artificial intelligence (AI) in various fields, including education, gaming, smart assistants, robotics, autonomous systems, and healthcare.

**Methodology:**

**Aim:** To engage students in interactive learning activities that foster critical thinking and understanding of the Internet and its applications.

**Strategy:** Begin the lesson with a brief introduction to the concept of the Internet and its evolution. Use multimedia resources such as videos, images, and real-life examples to illustrate the role of the Internet in education, e-commerce, and AI. Facilitate group **discussions and** brainstorming sessions to encourage students to share their perspectives and insights. Incorporate hands-on activities such as case studies, role-plays, and interactive quizzes to reinforce learning objectives.

**Expected Skills achieved by the learners:** Critical thinking and problem-solving skills, Digital literacy and research skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Facebook
2. M-Commerce
3. E-Shopping
4. Social Networking Site
5. B2B

**B Write T for True and F for False**

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

**C Match the following**

1. Robotics
2. Facebook
3. E-shopping
4. ARPANET

**D Multiple choice questions**

1. Internet
2. C2C

**E Answer the following**

1. Social Network Sites help to build online communities, connecting with friends and family members, chatting and stay in touch with them. These are used to communicate over text, voice and video chatting. Some social media accounts are Facebook, WhatsApp, LinkedIn, Botim, Twitter, Instagram etc.
2. E-banking also known as Internet banking, online banking or virtual banking. E-banking is an E-commerce program that has streamlined people’s time-consuming and complex banking operations.
3. E-commerce is the buying and selling of goods and services or the transmission of funds or data, over an electronic network, primarily the Internet. Application of E-commerce are E-Shopping, E-banking and M-commerce.
4. Importance of internet in education to the students’ means that it makes easier for them to research things and relearn the content taught in the school. There are many benefits of

the internet in the field of education. Some of these are Access to Information, Online Research, E-Learning and Online Courses, Distance Learning, Digital Libraries, Multimedia Learning, Assessment and Testing, and Communication.

5. The word blog is the short form of the word Weblog. It is a website or part of a website with contents written frequently and added in a chronological order. The contents of a blog may be in the form of texts, audios, videos and links to other websites.

TT-IV

2

### MORE ON SCRATCH 3

#### General Objectives:

- To familiarize students with advanced features and screen elements of Scratch.
- To enable students to change the appearance of sprites in Scratch projects.
- To teach students how to incorporate sound effects into Scratch programs.

#### Learning Outcomes:

- Students can identify and explain various screen elements of Scratch, including tabs, sprite header pane, and sprite list.
- Students can change the appearance of sprites by editing costumes and applying graphical effects.
- Students can add sound effects to Scratch projects using the Sound Block Palette.

#### Methodology:

**Aim:** To enhance students' understanding and proficiency in using Scratch by exploring advanced features related to sprite appearance and sound effects.

**Strategy:** Start the lesson with a brief review of previous knowledge about Scratch. Then, demonstrate how to navigate through the different tabs and elements of the Scratch interface. Guide students through the step-by-step process of changing sprite appearance by modifying costumes and applying graphical effects. Provide hands-on activities where students practice these techniques.

**Expected Skills achieved by the learners:** Computational Thinking, Problem Solving Skills, Critical Thinking.

#### Lesson Activities:

##### A Fill in the blanks

- |               |            |           |             |
|---------------|------------|-----------|-------------|
| 1. Thumb nail | 2. Costume | 3. Repeat | 4. Graphics |
| 5. Ghost      | 6. Sound   |           |             |

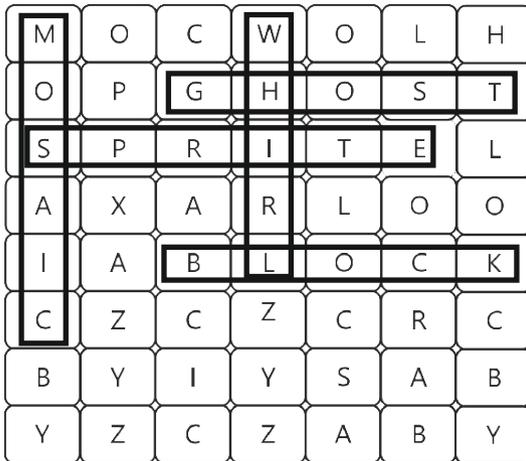
##### B Write T for True and F for False

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

##### C Multiple choice questions

1.  2. Both a and b 3. Code 4. Mosaic

**D Find five Scratch related words in the given grid**



**E Answer the following**

1. Code tab is active by default. When you start a new project, the code tab is automatically selected, displaying the Code Area.
2. The Sprite header pane displays about the information about the selected Sprite as well as a few tools for manipulating the Sprite.
3. Click on the Stage thumbnail in the Sprite List. A new screen with 3 tabs Scripts, Backdrop and Sounds will appear. Click on Backdrop tab Click on Choose a Backdrop button in New backdrop section. An Import Backdrop dialog box appears. Select the required image file from the selected folder. Click on OK button. The Stage backdrop will be changed.
4. The Looks Block Palette contains various blocks that control the appearance of Sprite. It also introduces the blocks that allow you either to show the Sprite on the stage or to make it disappear. For this purpose use the **hide** and **show** block respectively.
5. We can add sound in our Scratch Project either by using the blocks present in the Sound Block Palette or import sound from the Sound Tab.

**ASSESSMENT - 1**  
**(Based on chapters 1 and 2)**

**A Fill in the blanks**

1. Ghost      2. M-commerce      3. Graphics      4. Social Network site      5. Sound

**B Multiple choice questions**

1. Internet      2. Mosaic      3. Both a and b      4. Sprite header section      5. AI

**C Answer the following**

1. The Looks Block Palette contains various blocks that control the appearance of Sprite. It also introduces the blocks that allow you either to show the Sprite on the stage or to make it disappear. For this purpose use the **hide** and **show** block respectively.

2. Code tab is active by default. When you start a new project, the code tab is automatically selected, displaying the Code Area.
3. Social Network Sites help to build online communities, connecting with friends and family members, chatting and stay in touch with them. These are used to communicate over text, voice and video chatting. Some social media accounts are Facebook, WhatsApp, LinkedIn, Botim, Twitter, Instagram etc.
4. E-commerce is the buying and selling of goods and services or the transmission of funds or data, over an electronic network, primarily the Internet. Application of E-commerce are E-Shopping, E-banking and M-commerce.

TT-IV

3

## INTERNET ETIQUETTE

### General Objectives:

- Introduce students to the concept of Internet Etiquette (Netiquette).
- Teach the basic rules of etiquette, especially in the context of online communication.
- Familiarize students with different types of Internet Etiquette.
- Raise awareness about the importance of respectful and responsible behaviour online.

### Learning Outcomes:

- Students can define Internet Etiquette (Netiquette) and explain its significance in online communication.
- Students can identify and describe the basic rules of etiquette applicable to online interactions.
- Students can differentiate between various types of Internet Etiquette, including basic netiquette, netiquette of sending, netiquette of replaying, and netiquette of confidentiality.
- Students can recognize the importance of respecting privacy, verifying information, and using appropriate language in online communication.

### Methodology:

**Aim:** To engage students in interactive learning activities that promote understanding and application of Internet Etiquette principles.

**Strategy:** Begin the lesson by eliciting students' prior knowledge about internet usage and etiquette through discussion and questioning. Introduce the concept of Internet Etiquette using relatable examples and real-life scenarios. Present the basic rules of etiquette and different types of Netiquettes through multimedia presentations, case studies, and group discussions. Facilitate hands-on activities such as role-playing exercises, online etiquette quizzes, and collaborative projects to reinforce learning objectives.

**Expected Skills achieved by the learners:** Social Awareness, Communication Skills and Critical Thinking Skills.

## Lesson Activities:

### A Fill in the blanks

1. Etiquette
2. Four
3. Internet
4. Respond
5. Spamming
6. Flaming

### B Multiple choice questions

1. Confidentially
2. Help the newbies
3. Replaying
4. Internet

### C Write T for True and F for False

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

### D Answer the following

1. Internet etiquette is commonly referred to as Netiquette. Internet Etiquette is a set of social conventions that facilitate interaction over internet, ranging from usenet and mailing lists to blogs and forums.
2. Different type of Netiquette are Basic Netiquette, Netiquette of sending, Netiquette of replaying, and Netiquette of Confidentiality.
3. Do's of Netiquette are Protect your identity and Respond punctually.  
Don'ts of Netiquette are Use of coarse language and Sending spam.
4. Some netiquette to be followed while replaying are Check the current information before replaying, Summarize for the group, Reference the past information, Acknowledge important communication, and replaying and forwarding.
5. Netiquette of Sending is the etiquette to be followed while sending or passing an information or data through internet. Be brief while sending and Stay on the topic are the netiquette of sending.

TT-IV

4

MS WORD - EDITING FEATURES

### General Objectives:

- To familiarize students with common editing features in MS Word.
- To enable students to efficiently edit text documents using MS Word.

### Learning Outcomes:

- Students can understand the common keys and their uses in MS Word.
- Students can perform basic editing tasks such as Cut, Copy, and Paste text in MS Word.
- Students can utilize the Find and Replace feature to locate and modify text efficiently in MS Word.

### Methodology:

**Aim:** To empower students with essential editing skills in MS Word.

**Strategy:** Begin the lesson by introducing the concept of editing in MS Word and its importance in document creation. Demonstrate the common keys used for editing purposes, including Shift, Caps Lock, Enter, Tab, Delete and Backspace. Provide examples and practical exercises to help

students understand the usage of each key effectively.

**Expected Skills achieved by the learners:** Digital Literacy, Critical Thinking Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Editing
2. Find
3. Enter key
4. Alt
5. Triple
6. Copy

**B Multiple choice questions**

1. Backspace
2. Caps lock
3. Editing
4. Redo

**C Write the mouse actions**

1. Drag the mouse over the text
2. Double click the word
3. Move the pointer to the top left of the document text. When the cursor shape changes to a right-pointing arrow, triple-click it.
4. Move the pointer to the left of the line. When the cursor shape changes to a right-pointing arrow, click it.
5. Triple click anywhere in the paragraph.

**D Match the following**

1. To add multiple spaces.
2. Replace icon
3. Bottom left and right corners of keyboard
4. Short for Alternate key
5. To allow a single capital letter.

**E Identifying the following icons**

1. Paste
2. Cut
3. Copy
4. Redo
5. Undo
6. find

**F Answer the following**

1. Enter key, Delete or Backspace key, Caps Lock key, Shift Key, Ctrl Key, Alt Key and Tab Key are the commonly used keys in a keyboard for editing.
2. Two ways
3. Enter key is used to move the cursor to the next line.
4. Select the text '*Computer*' from the Document. Click on Copy option on Home tab. Place cursor at the space we want to copy. Then click on Paste option on Home tab. Now a copy of the word '*Computer*' is pasted at the desired place.
5. Select the Home tab. Click on the Find option from the Editing group. A navigation pane will appear on left side of the window. Type the word in the search document. Now the search results are displayed in the navigation pane and each word we typed in document is highlighted in yellow colour and preview of the results will appear in the navigation pane. To replace follow the steps: Click on Replace option from the editing group of home tab. Type word in the Find what field and type replacing word in the Replace with field. Click on Replace button to replace the word one by one or click on Replace All button to replace the word by single click. Also click Ok button on the next window.
6. Making changes in the existing text is called editing.

7. Backspace key is used to removes the character to the left of the cursor position.

**G Fill the crossword**

1. Find      2. Redo      3. Undo      4. Enter

**SEMESTER - 1**

**(Based on chapters 1, 2,3 and 4)**

**A Fill in the blanks**

1. M-commerce      2. Etiquette      3. Costume tab      4. B2B  
5. Thumb nail      6. Alt      7. Sound      8. Respond

**B Multiple choice questions**

1. Weblog      2. Sprite Header Pane      3. Replaying      4. Redo

**C Match the following**

1. Mosaic      2. Facebook      3. Roasting      4. Ctrl+Z

**D Write T for True and F for False**

1. T      2. F      3. T      4. T

**E Answer the following**

1. Click on the Stage thumbnail in the Sprite List. A new screen with 3 tabs Scripts, Backdrop and Sounds will appear. Click on Backdrop tab Click on Choose a Backdrop button in New backdrop section. An Import Backdrop dialog box appears. Select the required image file from the selected folder. Click on OK button. The Stage backdrop will be changed.
2. E-banking also known as Internet banking, online banking or virtual banking. E-banking is an E-commerce program that has streamlined people's time-consuming and complex banking operations.
3. Enter key is used to move the cursor to the next line.
4. Different type of Netiquette are Basic Netiquette, Netiquette of sending, Netiquette of replaying, and Netiquette of Confidentiality.
5. M-commerce application is a subset of retail E-commerce. purchases are made by the consumer using mobile or web applications that are optimized for the merchant.
6. We can add sound in our Scratch Project either by using the blocks present in the Sound Block Palette or import sound from the Sound Tab.
7. Code tab is active by default. When you start a new project, the code tab is automatically selected, displaying the Code Area.

**General Objectives:**

- To introduce students to Microsoft PowerPoint 2019 as a tool for creating dynamic presentations.

- To familiarize students with the basic functions and features of PowerPoint 2019.
- To enable students to create visually compelling presentations for various purposes.

**Learning Outcomes:**

- Students can understand the purpose and significance of Microsoft PowerPoint 2019 in creating presentations.
- Students can work proficiently with slides, including inserting, duplicating, deleting, and formatting slides.
- Students can insert various shapes, apply styles, and customize shapes to enhance the visual appeal of presentations.
- Students can create their own presentations using different layouts, text formatting options, and multimedia elements.
- Students can utilize advanced features such as table insertion, drawing tools, and slide duplication to improve presentation quality.

**Methodology:**

**Aim:** To equip students with the necessary skills to create and deliver effective presentations using Microsoft PowerPoint 2019.

**Strategy:** The lesson will employ a combination of interactive lectures, hands-on activities, group discussions, and project work to engage students and reinforce learning.

**Expected Skills achieved by the learners:** Cognitive Skills, Practical Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. PowerPoint    2. Home tab    3. Slides    4. Home tab    5. Drawing group

**B Write T for True and F for False**

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

**C Match the following**

1. Different Layout    2.Reflection    3.Smooth Animation    4.DrawingGroup

**D Fill the following steps**

- To insert a new slide** 1.Click on the arrow of New Slide on Slides group.  
2.Click on any layout you prefer.

**To duplicate a slide**

1. Select the slide that you want to duplicate.    2.On the Home tab, click on the down arrow of the New Slide and Select Duplicate Selected Slides.

**To insert a shape**

1. Click on the Shapes box in the Drawing group. 2.Then select a shape from Shapes' box  
3. Drag the mouse where you want to insert a shape

**E Fill the crossword**

1. Delete    2. Quick style    3. Drawing    4. Slides    5. Font

**F Answer the following**

1. A Presentation is a collection of slides.
2. Clipboard, Slides, Font, Paragraph, Drawing and Editing.
3. Slides are individual page of a presentation.
4. In a slide, you can enter or edit text by clicking on the text box .
5. Select the shape that you want to Fill. Click Shape Fill on the drawing group. Click on the down arrow at the Shape Fill. Select Gradient from the drop down menu.

**TT-IV**

**6**

**LOGICAL REASONING**

**General Objectives:**

- To enhance students' cognitive abilities and critical thinking skills through activities aimed at improving numerical, visual, and analytical skills, developing problem-solving abilities, and fostering creativity and goal-setting.

**Learning Outcomes:**

- Students can demonstrate improved numerical, visual, and analytical skills through participation in various activities.
- Students can apply problem-solving strategies to effectively tackle various challenges presented in the activities.
- Students can generate creative ideas and set achievable goals based on the outcomes of the activities.

**Methodology:**

**Aim:** To engage students in a variety of activities to enhance their logical reasoning skills and foster critical thinking abilities.

**Strategy:** Begin by introducing students the concept of logical reasoning and its importance in everyday life. Explain how logical reasoning skills can be developed through engaging activities. Choose a variety of activities from the provided list that align with the learning objectives. Demonstrate the first activity to the students, providing step-by-step instructions and modelling problem-solving strategies. Guide students in setting personal goals for improving their logical reasoning skills based on their performance in the activities.

**Expected Skills achieved by the learners:** Numerical, Visual & analytical skills and Problem-solving skills.

**Lesson Activities:**

**A** Mother

**B** A

**C** In this circle pattern consider the difference of two opposite cells are 3 so the missing cells values are 10 & 4  
eg:  $1-4=3$ ,  $9-6=3$ ,  $5-2=3$

**D** 16

**E Find out**

Name of Child	Cat	Dog	Bird	Fish
Bob		✓		
Mary	✓			
Cathy				✓
Sue			✓	

1. The boy has a dog
2. Sue has a pet with 2 legs
3. Mary does not have a fish.

**F Find out the age of monsters**

Clues



Age	Buzz	Chomp	Fuzz Ball	Ruff	Slimy
5					✓
6	✓				
8			✓		
9		✓			
10				✓	

1. Slimy is the youngest of the weird monsters.
2. Chomp has been alive for an odd number of years.
3. Buzz has been alive for the same number of years as he has eyes.
4. Puff is four years older than Buzz.

**G Riddles**

1. Kate
2. 3(three)

**H Robot ages logic puzzle**

Clues



	3	4	5	6	8
Red robot	✓				
Blue robot		✓			
Green robot					✓
Yellow robot			✓		
Black robot				✓	

1. The red robot's age is an odd number.
2. The blue robot is one year older than the green robot, and two years younger than the yellow robot.
3. The green robot was manufactured five years ago.

**ASSESSMENT - 2**

(Based on chapters 5 and 6)

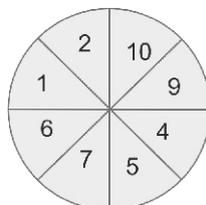
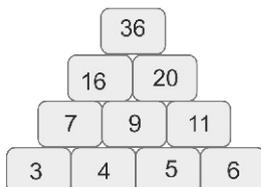
**A Fill in the blanks**

1. Home
2. Microsoft Powerpoint
3. Slides

**B Write T for True and F for False**

1. F
2. T
3. F

**C Fill the missing cell**



**D Answer the following**

1. Slides are individual page of a presentation.
2. Clipboard, Slides, Font, Paragraph, Drawing and Editing.
3. In a slide, you can enter or edit text by clicking on the text box.

TT-IV

7

**HISTORY AND APPLICATION OF AI**

**General Objectives:**

- To provide an overview of the history and development of AI technology.
- To introduce students to the concept of Artificial Intelligence (AI) and its evolution over time.
- To cultivate an understanding of how AI impacts everyday life and society.
- To familiarize students with the definition and applications of Artificial Intelligence (AI).

**Learning Outcomes:**

- Students can explain the concept of intelligence and identify its criteria.
- Students can define Artificial Intelligence (AI) and differentiate it from human intelligence.
- Students can recognize key milestones and contributors in the history of AI development.
- Students can identify events in the evolution of Artificial Intelligence.
- Students can recognize examples of AI applications in everyday life, such as virtual assistants, recommendation systems, and autonomous vehicles.

**Methodology:**

**Aim:** To educate students about the history and evolution of AI, from its early beginnings to its current applications in modern society, and applications of Artificial Intelligence (AI) in society.

**Strategy:** The lesson will employ a combination of multimedia presentations, interactive discussions, hands-on activities, and real-world examples to engage students and facilitate learning. Begin the lesson by defining Artificial Intelligence (AI) and discussing its importance in contemporary society. Provide a historical overview of AI, starting from its inception in the 20th century to its recent developments. Highlight significant milestones in the evolution of AI, such as Alan Turing's contributions, the development of early AI systems, and breakthroughs in machine learning.

**Expected Skills achieved by the learners:** Critical Thinking, Ethical Awareness & Problem-solving skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Roomba
2. Artificial Intelligence
3. Smart Home
4. John McCarthy
5. Internet of Things

**B Write T for True and F for False**

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

**C Match the following**

1. Alexa      2. Self-Driving      3. Urban Area      4. Internet of Things

**D Write name of the picture and year of invention**

1. Siri-2011    2. ASIMO-2000    3. Roomba-2002    4. Kismet-1990  
5. Google home device-2016    6. Sophia-2016

**E Multiple choice questions**

1. Siri      2. Autonomous      3. John McCarthy      4. Smart Home  
5. Smart City      6. Google

**F Find the words in the given grid**

I	N	T	E	R	N	E	T
W	C	D	V	R	D	C	A
E	M	S	I	R	I	A	B
B	B	H	R	B	C	A	C
S	C	T	T	B	C	L	D
I	N	T	U	R	N	E	T
T	C	P	A	B	C	X	C
T	E	S	L	A	D	A	C

**G Answer the following**

1. Artificial Intelligence can be defined as a branch of computer science that can simulate human intelligence.
2. ASIMO is an artificial Humanoid robot created by honda in 2000.
3. Self-driving vehicles are cars or trucks in which human drivers are not required to take control to operate the vehicle safely.
4. Microsoft launched Kinect for Xbox360, the first gaming device to track human body movement, using just a 3D camera and infrared detection, enabling users to play their Xbox 360 wirelessly.
5. Internet of Things.

**SEMESTER - 2**

**(Based on chapters 5,6 and 7)**

**A Fill in the blanks**

1. Format      2. Drawing      3. Roomba      4.IoT    5.Slide

**B Multiple choice question**

1. Smart City      2. Alexa      3. Autonomous

**C Write T for True and F for False**

1. T    2. T    3. F    4. T    5. T

**D Match the following**

1. Different Layout    2. Self-Driving car    3. Urban area    4. Smooth Animation

**E Answer the following questions**

1. Smart Home      2. Self-Driving Vehicles      3. Smart City

2. A Presentation is a collection of slides.
3. Internet of Things.
4. Artificial Intelligence can be defined as a branch of computer science that can simulate human intelligence.
5. Select the shape that you want to Fill. Click Shape Fill on the drawing group. Click on the down arrow at the Shape Fill. Select Gradient from the drop down menu.
6. Self-driving vehicles are cars or trucks in which human drivers are not required to take control to operate the vehicle safely.

TT-V

1

## GOOGLE APPS

### General Objectives:

- To introduce students to the Google Apps suite and its various components.
- To familiarize students with the functionalities and benefits of Google Apps in everyday life.
- To develop students' digital literacy skills and enhance their ability to use online productivity tools effectively.

### Learning Outcomes:

- Students can understand the concept of Google Apps and its components, including G Suite, Google Drive, and Google Maps.
- Students can identify the purpose and utility of each Google App, such as creating documents, storing files, and navigating with maps.
- Students can demonstrate the ability to access and utilize Google Apps for personal and educational purposes.
- Students can collaborate with peers using Google Docs, Sheets, and Slides, demonstrating real-time editing and sharing capabilities.
- Students can navigate Google Maps to locate places, plan routes, and explore geographical information.

### Methodology:

**Aim:** To introduce students to the Google Apps suite and empower them with the necessary skills to utilize its various tools efficiently for personal and educational purposes.

**Strategy:** Begin by discussing the concept of Google Apps and its significance in modern technology. Use multimedia resources to showcase the features and functionalities of G Suite, Google Drive, and Google Maps. Provide guided practice sessions where students can explore Google Apps under supervision. Facilitate group activities where students work together using Google Docs, Sheets, and Slides to complete tasks. Discuss real-life scenarios where Google Apps can be beneficial, encouraging students to relate the lesson to their daily lives.

**Expected Skills achieved by the learners:** Digital Literacy and Problem-solving Skills.

## Lesson Activities:

### A Fill in the blanks

1. G-suite
2. Google Drive
3. Google earth
4. Google Map
5. Satellite
6. Username and password

### B Match the following

1. Word processor
2. Spreadsheet
3. Presentation program
4. File storage
5. Web mapping

### C Write T for True and F for False

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

### D Identify the following

1. Google drive
2. Google sheet
3. Google Slide
4. Google Docs
5. Pegman

### E Answer the following

1. Google Sheet, Google Slide, Google Docs and Google Drive.
2. Google Drive is a safe place for all your files and puts them within reach from any smartphone, tablet or computer. Files in Drive like your videos, photos and documents are backed up safely, so you can't lose them.
3. G Suite is a collection of Google application that brings together essential services including email , Google Drive, Google Docs, Google calendar etc.
4. Yellow character on the left side of the map is called Pegman icon.

## General Objectives:

- To familiarize students with the formatting features available in Microsoft Word 2019.
- To empower students with the skills to format text, align content, and adjust line spacing effectively using MS Word.
- To familiarize students with the process of inserting pictures and clipart in Microsoft Word 2019 documents.
- To enable them to insert WordArt in documents for decorative text effects and how to apply 3D styles to enhance the visual appeal of documents.

## Learning Outcomes:

- Students can proficiently format text in MS Word by applying features such as font styles, sizes, and effects.
- Students can align text using different methods including left, right, centre and justify alignments.
- Students can understand and utilize line spacing options to enhance the readability of

documents.

- Students can insert pictures and clipart from various sources such as files, CDs, pen drives, internet, and online pictures.
- Students can insert Word Art with different styles, apply 3D styles to objects and text within documents to enhance their visual appearance.

### **Methodology:**

**Aim:** To equip students with essential skills in formatting documents using Microsoft Word, effectively insert and manipulate visual elements such as pictures, clipart, 3D styles, and Word Art in Microsoft Word 2019 documents.

**Strategy:** Begin the lesson with an introduction to the concept of formatting and its importance in document creation. Utilize interactive demonstrations using Microsoft Word to illustrate various formatting features such as font styles, sizes, and effects. Conduct hands-on activities where students practice formatting text, aligning content, and adjusting line spacing in sample documents. Introduce the concept of inserting pictures and clipart, demonstrating the process step-by-step.

**Expected Skills achieved by the learners:** Digital Literacy, Creativity Skills.

### **Lesson Activities:**

#### **A Fill in the blanks**

1. Formatting
2. Paragraph
3. Clear formatting
4. Font
5. Text
6. font
7. Right alignment

#### **B Write T for True and F for False**

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

#### **C Multiple choice questions**

1. Illustrations
2. Text outline
3. WordArt
4. Strikethrough
5. Justify Align
6. Left Align

#### **D Write shortcut key for the following**

1. Ctrl + B
2. Ctrl + I
3. Ctrl + U
4. Ctrl + J
5. Ctrl + E
6. Ctrl + R
7. Ctrl + L
8. Ctrl + =

#### **E Match the following**

1. Illustration group
2. Text group
3. Conversions group
4. Font group

#### **F Identify the Alignment options**

- a. Left Alignment
- b. Center Alignment
- c. Right Alignment
- d. Justify Alignment

#### **G Identify the following text**

1. Underline
2. Super script
3. Bold
4. upper case
5. Text highlight
6. Italic
7. Strikethrough

#### **H Answer the following**

1. WordArt is a gallery of text style that you can add to your Microsoft Office 2019

document to create decorative effects to the text.

2. Alignment means arranging words or documents in a more structured way.
3. Text Fill ,Text Outline ,Text effects
4. Within the Symbol drop down list in the Symbols Group on Insert tab click on More Symbols in the drop down list, you will get a Symbol window. Here you can insert the symbol from this window.

## ASSESSMENT - 1

(Based on chapters 1 and 2)

### A Fill in the blanks

1. Gmap
2. Clear Formatting
3. Font
4. maps.google.co.in

### B Write T for True and F for False

1. T
2. F
3. T

### C Multiple choice questions

1. Ctrl + E
2. WordArt

### D Answer the following

1. Insert tab on the MS Word window is a collection of inserting tools. it helps to insert and modify tables, headers, footers, Lists, cover pages, pictures, chart, diagrams and other document building blocks.
2. Google Drive is a safe place for all your files and puts them within reach from any smartphone, tablet or computer. Files in Drive like your videos, photos and documents are backed up safely, so you can't lose them.
3. Text Fill ,Text Outline ,Text effects.

TT-V

3

MORE ON SCRATCH

### General Objectives:

- To further enhance students' understanding of Scratch programming.
- To introduce students to advanced features of Scratch, including switching backdrops, working with multiple sprites, and understanding rotation styles.
- To enable students to create more complex Scratch projects incorporating various elements.

### Learning Outcomes:

- Students can learn about switching backdrops and implement this feature in their Scratch projects.
- Students can work effectively with multiple sprites, including adding, deleting, and duplicating Sprites.
- Students can understand different rotation styles available in Scratch and apply them to Sprites in their projects.

- Students can manipulate the position and movement of sprites using X-Y coordinates.
- Students can create scripts to make sprites glide to specific locations on the stage.

**Methodology:**

**Aim:** To familiarize students with advanced Scratch programming concepts related to switching backdrops, working with multiple sprites, and adjusting rotation styles.

**Strategy:** Begin the lesson by revising concepts learned in the previous class, such as adding sprites and changing backgrounds. Explain the concept of switching backdrops and demonstrate how to do it using Scratch. Show students how to add, delete, and duplicate sprites.

**Expected Skills achieved by the learners:** Cognitive Skills, Practical Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Three
2. 480, 360
3. Background
4. Control Block
5. Sprite
6. Sprite Header pane
7. X:240, Y: 180
8. Green flag

**B Multiple choice question**

1. X
2. Vertical
3. -240
- 4.

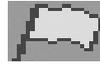
**C Identify these blocks**

- a. Control block
- b. Events block
- c. Motion block
- d. Looks block

**D Write T for True and F for False**

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

**E Match the following**

1. 
2. 
3. 
4. 

**G Answer the following**

1. Click on the stage icon and import the desired background from the desired folder on the stage. The background is added on the stage as well as in the backdrop list under the Backdrop tab.
2. All round, left/right and do not rotate are the three buttons of rotation style.
3. Click on choose new sprite icon, select a sprite from folders in new sprite dialog box.
4. Scratch's coordinate system uses 2 coordinates, "X" and "Y" position, to determine the location of a sprite on the stage. The "X" value determines the horizontal location of the sprite and the "Y" value determines the vertical location or height.

**General Objectives:**

- To familiarize students with the OpenShot video editing software.
- To enable students to understand the features and components of OpenShot.
- To introduce students to basic video editing concepts such as importing files, arranging clips, applying transitions, and adding effects.

- To empower students with the skills needed to create simple video projects using OpenShot.

### **Learning Outcomes:**

- Students can understand the features and capabilities of OpenShot video editor.
- Students can identify the components of the OpenShot interface and their functions.
- Students can demonstrate the ability to import media files into OpenShot and arrange them on the timeline.
- Students can apply basic editing techniques such as trimming, slicing, and moving clips on the timeline.
- Students can utilize transition effects to enhance the visual flow between video clips.
- Students can add video effects and audio effects to enhance the quality and appeal of their projects.
- Students can create and customize titles for their video projects using the built-in title editor in OpenShot.

### **Methodology:**

**Aim:** To engage students in hands-on learning experiences that facilitate their understanding and mastery of OpenShot video editing software.

**Strategy:** Begin the lesson by providing an overview of OpenShot video editing software, highlighting its user-friendly interface and key features. Demonstrate the process of starting OpenShot and navigating its interface, including the title bar, menu bar, toolbar, function tabs, and video preview section. Engage students in hands-on activities to practice importing media files, arranging them on the timeline, and applying transitions and effects. Facilitate guided practice sessions where students can experiment with editing clips, adjusting properties, and exploring advanced features like keyframe animation.

**Expected Skills achieved by the learners:** Problem-solving Skills and Technological Literacy.

### **Lesson Activities:**

#### **A Fill in the blanks**

1. OSP
2. OpenShot
3. Transition
4. Time line
5. Project files
6. Menu

#### **B Multiple choice questions**

1. Razor Tool
2. Play Head
3. Video preview
4. Ruler

#### **C Write T for True and F for False**

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

#### **D Answer the following**

1. The OpenShot video editor is used for editing and creating videos.
2. Transition are applied to add special effects to the video. They are used to add connectivity to the consecutive scenes of a movie.
3. Title Bar : The title bar displays the application name and project name. it is placed at

the the top of the OpenShot Video Editor window.

Play Head : The vertical red line is the play head that represent the current playback position of the preview window.

4. Firstly click on the Export video option in the file menu. The export video dialog box will appears. Choose the desired format from the profile drop-down list. Click on the export video button. The export progress bar will appear at the bottom on the export video dialog box. you can also export your video by clicking on the export video icon located on toolbar.
5. Select the file from the project files pane that you want to add to the timeline. Then drag the file and place it on to the track 4 in the timeline. the clip will now be added to timeline.
6. Openshot can support various video , audio, and image formats.  
You can add multiple tracks, image and audio file in one video.  
You can create 3D animated title for the video.

## SEMESTER - 1

(Based on chapters 1,2,3 and 4)

### A Fill in the blanks

1. Google drive
2. change case
3. Green flag
4. Menu
5. .osp

### B Write T for True and F for False

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

### C Multiple choice questions

1. Razor tool
2. -240
3. G Suite
4. Backdrop
5. Illustrations

### D Identify the following text effect

1. Bold
2. Underline
3. Strike through
4. Subscript
5. Superscript

### E Match the following

1. 
2. 
3. 
4. 

### F Answer the following

1. Google Sheet, Google Slide, Google Docs and Google Drive.
2. Text Fill ,Text Outline ,Text effects
3. All round, left/right and do not rotate are the three button of rotation style.
4. Transition are applied to add special effects to the video. They are used to add connectivity to the consecutive scenes of a movie.

TT-V

5

MORE ON POWERPOINT 2019

### General Objectives:

- To familiarize students with the basic concepts and functionalities of PowerPoint graphics.
- To equip students with the skills necessary to create visually appealing and engaging presentations using PowerPoint.

## Learning Outcomes:

- Students can insert pictures and online pictures into PowerPoint slides.
- Students can understand the process of taking screenshots and creating photo albums in PowerPoint.
- Students can utilize illustrations group to insert shapes, SmartArt graphics, and charts into presentations.
- Students can insert tables and videos into PowerPoint slides.
- Students can apply different animation effects to text, pictures, and objects in PowerPoint.
- Students can utilize different views in presentation.

## Methodology:

**Aim:** To enhance students' understanding and skills in using PowerPoint graphics effectively.

**Strategy:** The lesson will be conducted through a combination of theoretical explanations, practical demonstrations, and hands-on activities.

**Expected Skills achieved by the learners:** Problem-solving Skills and Creativity skills.

## Lesson Activities:

### A Fill in the blanks

1. Illustrations    2. F5    3. WordArt    4. Insert Tab    5. Insert Tab

### B Multiple choice question

1. Hyperlink    2. Slide sorter    3. Chart    4. Photo Album    5. Notes Page    C

### Write T for True and F For False

1. F    2. T    3. F    4. F    5. T

### D Match the following

1. Enter    2. Master Views    3. Presentation Views    4. Animations    5. Slides

### E Answer the following

1. Click the Start From Beginning command on the Quick Access Toolbar or press the F5 key at the top of your keyboard. OR Select the Slide Show view command at the bottom of the PowerPoint window or Go to the Slide Show tab on the Ribbon to access more options.
2. Motion Path is an animation effect used to move an object or text in a specified path.
3. Photo Album is a presentation that you can create to display photographs.
4. Select the text. On the Animations tab, click on the More Button in the Animation group. Then you can see various types of Animation effects in the drop down list. Click on Split Animation effect. Select Vertical In option from Effect Options. Click on Animation Pane in Advanced Animation group. Then Animation pane will be opened in the right side of the window. Click on Start On Click from Animation Pane drop down list. Select Effect Option from the Animation Pane drop down window. Select Applause from the Sound combo box. Select By letter from the Animate text combo box. Click on OK button. Click on the Play button of the Animation pane.

5. A SmartArt graphic is a visual representation of information and ideas. It is used to communicate messages quickly, easily and effectively.
6. You can preview animation by clicking preview option preview group on the animation tab. This option is activated only when an animation is given to the text or slide.
7. Transitions are animations that you can use when advancing from one slide to the next during a presentation.

### General Objectives:

- To introduce students to Microsoft Excel 2019.
- To familiarize students with the basic features and functionalities of MS Excel.
- To equip students with the skills necessary to modify worksheets and work with workbooks.

### Learning Outcomes:

- Students can understand the concept of electronic spreadsheets and their significance.
- Students can navigate through MS Excel interface efficiently.
- Students can modify and edit data within a worksheet.
- Students can create and manage multiple worksheets within a workbook.
- Students can utilize basic formatting options to enhance the appearance of worksheets.
- Students can save and close Excel workbooks effectively.

### Methodology:

**Aim:** To provide students with a comprehensive understanding of Microsoft Excel 2019 and its basic functionalities.

**Strategy:** The lesson will be delivered through a combination of theoretical explanations, practical demonstrations, and hands-on exercises to ensure active engagement and understanding.

**Expected Skills achieved by the learners:** Practical skills, Time Management skills and Presentation Skills.

### Lesson Activities:

#### A Fill in the blanks

1. Spreadsheet    2. quickly and easily    3. Blank    4. F2    5. Cell    6. Worksheet

#### B Multiple choice questions

1. Workbook    2. Columns    3. Sheet 1    4. Merge    5. File

#### C Write T for True and F for False

1. F    2. T    3. T    4. T    5. T

#### D Match the following

1. To go First Row    2. To go Last row    3. To go Last Column    4. To go First Column

**E Answer the following**

1. Excel worksheet enables you to carry out complex arithmetic calculations and logical operations such as addition, multiplication, subtractions etc. It helps to easily generate reports and prepare graphs.
2. Spreadsheet contains data and information arranged in rows and columns . MS Excel spreadsheet is called an electronic spreadsheet.
3. Merging cells means combining two or more adjacent cells into one cell.
4. To change the row height, select the entire row and right click on it. Select the Row Height option from the popup menu, enter a new size of row in the Row Height box and click on OK button. You can also change the Row height by the directional arrow tool at the row heading margin.
5. There are 16384 columns and 1048576 rows in a worksheet.
6. Click on Start button, select Microsoft Office and choose Microsoft Excel 2019. A new workbook window will appear. From here select blank workbook.
7. To close Excel workbook, select close option from the File tab. Before closing a workbook, you should save it to avoid data loss.

**ASSESSMENT - 2**  
**(Based on chapters 5 and 6)**

**A Fill in the blank**

1. Blank
2. .... is an intersection of rows and columns. ans) Cell
3. Spreadsheet
4. .... is the shortcut key for reading view. ans) F5

**B Write T for True and F For False**

1. F
2. T
3. T

**C Multiple choice questions**

1. SmartArt
2. File

**D Answer the following**

1. Merging cells means combining two or more adjacent cells into one cell.
2. Spreadsheet contains data and information arranged in rows and columns . MS Excel spreadsheet is called an electronic spreadsheet.
3. Motion Path is an animation effect used to move an object or text in a specified path.

<b>TT-V</b>	<b>7</b>	<b>LOGICAL REASONING</b>
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**General Objectives:**

- To enhance students' cognitive abilities and critical thinking skills through activities aimed at improving numerical, visual, and analytical skills, developing problem-solving abilities, and fostering creativity and goal-setting.

## Learning Outcomes:

- Students can demonstrate improved numerical, visual, and analytical skills through participation in various activities.
- Students can apply problem-solving strategies to effectively tackle various challenges presented in the activities.
- Students can generate creative ideas and set achievable goals based on the outcomes of the activities.

## Methodology:

**Aim:** To engage students in a variety of activities to enhance their logical reasoning skills and foster critical thinking abilities.

**Strategy:** Begin by introducing students the concept of logical reasoning and its importance in everyday life. Explain how logical reasoning skills can be developed through engaging activities. Choose a variety of activities from the provided list that align with the learning objectives. Demonstrate the first activity to the students, providing step-by-step instructions and modelling problem-solving strategies. Guide students in setting personal goals for improving their logical reasoning skills based on their performance in the activities.

**Expected Skills achieved by the learners:** Numerical, Visual & analytical skills and Problem-solving skills.

## Lesson Activities:

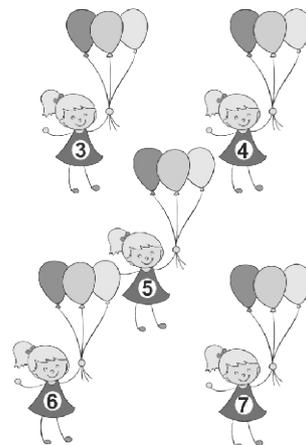
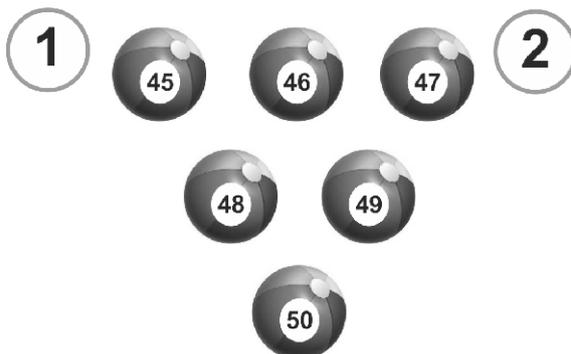
### 1. Count the basic shapes

① Square - 4    Rectangle - 4    Triangle - 5    Circle - 4    Oval - 4    Stars - 0

② Square - 1    Rectangle - 9    Triangle - 9    Circle - 4    Oval - 2    Stars - 0

### 2. Complete the number sequence by writing the missing numbers on the objects back.

Then match the numbers to the correct set by drawing lines.



3. Choose the image that continuous the pattern.

D



4. Riddles

1. Roosters don't lay eggs.
2. Friday
3. Once, because after you subtract 5 from 25 it becomes 20.
4. echo
5. 21 shakes hands

5. Sudoku

				1		4		
	2		6					5
3	9				7			1
5			6				3	
	6						8	
	3		8					7
9			2				5	6
4				5			2	
		2		3				

	1	2	3	4	5	6	7	8	9
A	6	7	5	3	1	2	4	9	8
B	8	2	1	6	9	4	3	7	5
C	3	9	4	8	5	7	2	6	1
D	5	4	8	7	6	9	1	3	2
E	1	6	7	4	2	3	5	8	9
F	2	3	9	5	8	1	6	4	7
G	9	1	3	2	4	8	7	5	6
H	4	8	6	1	7	5	9	2	3
I	7	5	2	9	3	6	8	1	4

Solution Steps

Here you can view the logical steps used to solve the sudoku puzzle.

Step 1: Naked Single in cell (C8)

The cell has a single candidate with the value 6

Actions:

Cell solved with the value 6.

Candidate 6 removed from cells (C3, C7, A8, F8)

Step 2: Hidden Single in cell (F7)

The cell is the only cell in row F with the candidate value 6

Actions:

Cell solved with the value 6.

Step 3: Hidden Single in cell (F4)

The cell is the only cell in row F with the candidate value 5

Actions:

Cell solved with the value 5.

Candidate 5 removed from cells ( A4, C4, E4, E5 )

Step 4: Hidden Single in cell ( E7 )

The cell is the only cell in row E with the candidate value 5

Actions:

Cell solved with the value 5.

Step 5: Hidden Single in cell ( H3 )

The cell is the only cell in row H with the candidate value 6

Actions:

Cell solved with the value 6.

Candidate 6 removed from cells ( A3, I1 )

Step 6: Hidden Single in cell ( A1 )

The cell is the only cell in row A with the candidate value 6

Actions:

Cell solved with the value 6.

Step 7: Hidden Single in cell ( I6 )

The cell is the only cell in row I with the candidate value 6

Actions:

Cell solved with the value 6.

Step 8: Hidden Single in cell ( I2 )

The cell is the only cell in row I with the candidate value 5

Actions:

Cell solved with the value 5.

Candidate 5 removed from cells ( A2 )

Step 9: Hidden Single in cell ( A3 )

The cell is the only cell in row A with the candidate value 5

Actions:

Cell solved with the value 5.

Candidate 5 removed from cells ( C3 )

Step 10: Hidden Single in cell ( C5 )

The cell is the only cell in row C with the candidate value 5

Actions:

Cell solved with the value 5.

Step 11: Hidden Single in cell ( C7 )

The cell is the only cell in row C with the candidate value 2

Actions:

Cell solved with the value 2.

Candidate 2 removed from cells ( D7, A9 )

Step 12: Hidden Single in cell ( A6 )

The cell is the only cell in row A with the candidate value 2

Actions:

Cell solved with the value 2.

Candidate 2 removed from cells ( D6, E6, F6 )

Step 13: Hidden Single in cell ( D9 )

The cell is the only cell in row D with the candidate value 2

Actions:

Cell solved with the value 2.

Candidate 2 removed from cells ( E9 )

Step 14: Hidden Single in cell ( F1 )

The cell is the only cell in row F with the candidate value 2

Actions:

Cell solved with the value 2.

Candidate 2 removed from cells ( E1 )

Step 15: Hidden Single in cell ( E5 )

The cell is the only cell in row E with the candidate value 2

Actions:

Cell solved with the value 2.

Step 16: Hidden Single in cell ( D2 )

The cell is the only cell in column 2 with the candidate value 4

Actions:

Cell solved with the value 4.

Candidate 4 removed from cells ( D3, D4, D6, E3, F3 )

Step 17: Hidden Single in cell ( D3 )

The cell is the only cell in row D with the candidate value 8

Actions:

Cell solved with the value 8.

Candidate 8 removed from cells ( B3, C3, G3 )

Step 18: Naked Single in cell ( C3 )

The cell has a single candidate with the value 4

Actions:

Cell solved with the value 4.

Candidate 4 removed from cells ( C4, B3 )

Step 19: Naked Single in cell ( C4 )

The cell has a single candidate with the value 8

Actions:

Cell solved with the value 8.

Candidate 8 removed from cells ( A4, H4, I4, B6 )

Step 20: Hidden Single in cell ( D4 )

The cell is the only cell in row D with the candidate value 7

Actions:

Cell solved with the value 7.

Candidate 7 removed from cells ( E4, H4, I4 )

Step 21: Hidden Single in cell ( G3 )

The cell is the only cell in column 3 with the candidate value 3

Actions:

Cell solved with the value 3.

Candidate 3 removed from cells ( G7 )

Step 22: Hidden Single in cell ( G6 )

The cell is the only cell in column 6 with the candidate value 8

Actions:

Cell solved with the value 8.

Candidate 8 removed from cells ( G2, G7 )

Step 23: Hidden Single in cell ( G5 )

The cell is the only cell in row G with the candidate value 4

Actions:

Cell solved with the value 4.

Candidate 4 removed from cells ( B5, I4 )

Step 24: Naked Single in cell ( B5 )

The cell has a single candidate with the value 9

Actions:

Cell solved with the value 9.

Candidate 9 removed from cells ( B6, B7, B8, H5, A4 )

Step 25: Naked Single in cell ( A4 )

The cell has a single candidate with the value 3

Actions:

Cell solved with the value 3.

Candidate 3 removed from cells ( A9, E4, B6 )

Step 26: Naked Single in cell ( B8 )

The cell has a single candidate with the value 7

Actions:

Cell solved with the value 7.

Candidate 7 removed from cells ( B1, B3, B7, A8, I8 )

Step 27: Naked Single in cell ( H5 )

The cell has a single candidate with the value 7

Actions:

Cell solved with the value 7.

Candidate 7 removed from cells ( H2, H7 )

**General Objectives:**

- To introduce students to advanced concepts and exciting facts about artificial intelligence (AI) and its applications.

**Learning Outcomes:**

- Students can explain and discuss exciting facts related to AI, including advancements in technology and its impact on society.
- Students can identify key developments and achievements in the field of AI, such as Elon Musk's involvement in autonomous vehicles and the emergence of AI-powered pets.
- Students can analyse the potential implications of AI advancements, such as the ability to read minds and the concept of robot citizenship.
- Students can recognize individuals who have made significant contributions to the field of AI, such as Tanmay Bakshi and their impact on technology.
- Students can understand the significance of data in AI systems and its role in enabling machine learning and decision-making processes.

**Methodology:**

**Aim:** To engage students in a dynamic and interactive learning experience that promotes critical thinking and understanding of AI concepts.

**Strategy:** Begin the lesson by presenting students with intriguing facts about AI, such as Elon Musk's fortune and the development of AI-powered pets, to capture their interest and curiosity. Utilize multimedia resources, such as images and videos, to illustrate key concepts and achievements in the field of AI. Facilitate discussions and group activities to encourage active participation and collaborative learning. Incorporate real-life examples and case studies to demonstrate the practical applications of AI technology in various domains. Encourage students to ask questions and express their opinions, fostering a deeper understanding of the ethical and societal implications of AI advancements.

**Expected Skills achieved by the learners:** Ethical Awareness, Digital Literacy and Critical Thinking Skills.

**Lesson Activities:****A Fill in the blanks**

1. Tesla
2. Sophia
3. Data
4. Auto-correction

**B Answer the following**

1. Data plays a fundamental role in AI as it serves as the foundation training, validating, and improving AI models. Data can be texts, numbers, audios, videos, images or it could be facts that are stored inside a person's mind.
2. Elon Musk's fortune: The world's second richest person Mr Musk's net worth jumped

from \$7.2bn to \$128bn after the share values of his car firm Tesla grew

2025 - The year of the pet bots: Although real pets are lovable, they have a few demerits.

They need to be fed, cleaned up, and they pass away.

AI can read your mind: A new methodology has been developed by the company Neuralink, which uses a sensor called N1. This sensor could read and transmit data wirelessly from our brain. The thoughts in the form of signals transmitted by these sensors can be decoded using AI technology.

3. Auto-correction, also known as text replacement, replace-as-you-type or simply autocorrect, is an automatic data validation function commonly found in word processors and text editing interfaces for smartphones and tablet computers.

## ASSESSMENT - 2

(Based on chapters 5 and 6)

### A Fill in the blanks

1. Neuralink
2. Blank
3. cell
4. Auto-correction

### B Write T for True and F For False

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

### C Multiple choice questions

1. Column
2. Merge
3. Saudi Arabia
4. Exciting

### D Match the following

1. F5
2. Enter, Pagedown, N
3. Backspace, Page Up, P
4. Slide number + Enter
5. Ctrl+P

### E Count the basic shapes

Square - 4    Rectangle - 4    Triangle - 5    Circle - 4    Oval - 4    Stars - 0

### F Answer the following

1. Data plays a fundamental role in AI as it serves as the foundation training, validating, and improving AI models. Data can be texts, numbers, audios, videos, images or it could be facts that are stored inside a person's mind.
2. Motion Path is an animation effect used to move an object or text in a specified path.
3. Auto-correction, also known as text replacement, replace-as-you-type or simply autocorrect, is an automatic data validation function commonly found in word processors and text editing interfaces for smartphones and tablet computers.
4. Transitions are animations that you can use when advancing from one slide to the next during a presentation.
5. Elon Musk's fortune: The world's second richest person Mr Musk's net worth jumped from \$7.2bn to \$128bn after the share values of his car firm Tesla grew  
2025 - The year of the pet bots: Although real pets. are lovable, they have a few demerits.  
They need to be fed, cleaned up, and they pass away.

AI can read your mind: A new methodology has been developed by the company Neuralink, which uses a sensor called N1. This sensor could read and transmit data wirelessly from our brain. The thoughts in the form of signals transmitted by these sensors can be decoded using AI technology.

**General Objectives:**

- To introduce students to advanced Google Workspace applications.
- To familiarize students with Google Sheets, Google Slides, and other Workspace applications.
- To highlight the features and benefits of Google Workspace.
- To encourage students to explore and utilize various Google Workspace tools for productivity and collaboration.

**Learning Outcomes:**

- Students can navigate and use Google Sheets effectively.
- Students can create and deliver presentations using Google Slides.
- Students can utilize other Google Workspace applications for productivity and collaboration purposes.
- Students can understand the significance of cloud computing and its applications in Google Workspace.
- Students can demonstrate proficiency in utilizing Google Workspace tools for personal and professional tasks.

**Methodology:**

**Aim:** To facilitate an interactive learning experience to introduce students to advanced Google Workspace applications.

**Strategy:** Begin the lesson with an introduction to Google Workspace and its various applications. Provide hands-on practice sessions for students to explore Google Sheets, Google Slides, and other Workspace tools. Encourage collaborative activities where students work together using Google Workspace applications. Utilize multimedia presentations and demonstrations to showcase the features and capabilities of Google Workspace. Conduct quizzes or assessments to evaluate students' understanding and proficiency in using Google Workspace tools.

**Expected Skills achieved by the learners:** Communication Skills, Digital Literacy Skills and Creativity Skills.

**Lesson Activities:****A Fill in the blanks**

1. Google Classroom    2. Google contact    3. Google Earth    4. Google Translate

**B Multiple choice questions**

1. Google Classroom    2. Google contact    3. Google Meet    4. Google Calendar

5. Google Translate 6. Google Forms

**C Write T for True and F for False**

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

**D Match the following**

1. 3D representation earth 2. Time Management 3. PowerPoint  
4. Photo sharing 5. Video Conferencing

**E Write the name of the following**

1. Google Classroom 2. Google Photos 3. Google Contacts 4. Google Sheet  
5. Google Calendar 5. Google Slides

**F Answer the following**

1. Google Photos lets you access your photos from any device and frees up storage once they're backed up. It offers unlimited free storage and tools for creating movies, animations, collages, and albums. Its powerful search makes finding items easy, and sharing is simple.

2. Google Workspace is a collection of cloud computing, productivity and collaboration tools, software and products developed and marketed by Google.

3. It make decisions faster. Collaborate in real time. Stores and share files in the cloud. Secure data and device cloud storage . Workspace is compatible with almost everything.

4. Google Classroom is a free platform by Google for schools. It simplifies creating, distributing, and grading assignments. Its main goal is to streamline file sharing between teachers and students. It tracks student performance and allows exporting scores to the school's database. Teachers can access additional features with an Education account.

5. Google Translate is a multilingual neural machine translation service developed by Google to translate texts, documents and web sites from one language into another.

**General Objectives:**

- To introduce students to the concept of HTML and its importance in web development.
- To familiarize students with the structure of HTML documents.
- To teach students about various HTML tags and their functionalities.
- To enable students to create basic web pages using HTML 5.

**Learning Outcomes:**

- Explain the significance of HTML in web development.
- Identify and describe the structure of an HTML document.
- Recognize and utilize different HTML tags for creating web content.
- Create simple web pages using HTML 5.

**Methodology:**

**Aim:** To provide students with a foundational understanding of HTML 5 and its usage in web development.

**Strategy:** The lesson will be delivered through a combination of theoretical explanations, practical demonstrations, and hands-on exercises.

**Expected Skills achieved by the learners:** Analytical Skills, Practical Skills & Creativity Skills.

**Lesson Activities:****A Fill in the blanks**

1. <BODY TEXT= “color”> 2. Content 3. <TITLE> 4. <BR> 5. Web

**B Multiple Choice Questions**

1. WWW 2. HTML 3. tags 4. container tag

**C Match the Following**

1. Bold 2. Superscript 3. Strikethrough 4. Subscript 5. Paragraph

**D Find out the odd one**

1. <PRE> 2. TEXT

**E Answer the following**

1. HTML is a simple scripting language to create a web page. Eg: <BODY>, <Head>.
2. MARQUEE tag is used to move the text through the page. Using this tag a text can be moved continuously from one end to the other end of the web page.
3. Attributes are additional parameters that tell how to display HTML elements. Attribute appears as an attribute name followed by an equal to (=) sign and then its value.
4. Image tag is used to insert an image to enhance the look and feel of a web page  
Syntax: <IMG SRC= “image name” ALIGN= “value” BORDER= “value”>

**ASSESSMENT - 1**

**(Based on chapters 1 and 2)**

**A Fill in the blanks**

- 1.<BODY TEXT= “color”> 2. Google calendar 3. <BR> 4. Google Translate

**B Write T for True and F for False**

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

**C Multiple choice questions**

- 1.WWW 2.Google Meet 3.Tags t 4. Google Forms

**C Answer the following questions**

1. Google Sheet allows collaborative editing of spreadsheets in real-time, with multiple users able to work on the same spreadsheet simultaneously. Google Sheets supports offline editing on desktop or mobile apps and works on any device, including iOS and Android.
2. Google Drive, Google Docs, Google Sheets, Google Slides, Google Calendar etc.
3. Attributes are additional parameters that tell how to display HTML elements.

Attribute appears as an attribute name followed by an equal to (=) sign and then its value.

**General Objectives:**

- To introduce students to the concept of cyber security and its importance in daily life.
- To familiarize students with various cyber threats and crimes prevalent in the digital world.
- To educate students about essential cyber security measures and safety precautions.
- To introduce students to relevant cyber laws and regulations.

**Learning Outcomes:**

- Students can understand the meaning and significance of cyber security.
- Students can identify different types of cyber crimes and their potential consequences.
- Students can recognize the importance of maintaining good cyber behaviour and implementing safety measures.
- Students can demonstrate knowledge of essential cyber security measures to protect themselves online.
- Students can understand the role of cyber laws in regulating online activities and protecting individuals' rights.

**Methodology:**

**Aim:** The aim of this lesson is to educate students about cyber security, cybercrimes, and relevant laws and regulations.

**Strategy:** Begin the lesson by discussing the definition and importance of cyber security, using relatable examples to illustrate its relevance in daily life. Introduce the sub-topics of cyber behaviour, cybercrimes, and cyber acts, explaining each concept in detail with real-life examples and case studies. Engage students in interactive discussions and activities to enhance understanding and encourage participation. Use multimedia presentations, videos, and infographics to visually reinforce key concepts and engage students.

**Expected Skills achieved by the learners:** Ethical and Moral Values, Communication skills and Digital Literacy.

**Lesson Activities:****A Fill in the blanks**

1. IT Security 2. IT Act 2000 3. Hacking 4. Identity theft 5. Identity theft

**B Multiple Choice Questions**

1. Phishing 2. Cyber Law 3. Cyber Crime 4. Plagiarism 5. Stalker 6. Hacker

**C Write T for True and F for False**

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

**D Answer the following**

1. Cyber behavior refers to the actions and habits individuals and organizations adopt to

protect themselves and their sensitive information online. This can range from using strong passwords to avoiding suspicious emails and links.

2. When an attacker harasses a victim through emails, social media, chat rooms, blogs, instant messaging, etc., it is called cyber stalking.
3. Cyber crimes are offenses committed using computers and smart devices connected through the internet. Victims of cyber crimes can be organizations or individuals.
4. a) All electronic contracts created through secure electronic channels are legally valid.  
b) There is legal recognition for digital signatures. c) Security measures for electronic records and digital signatures are in place under the Copyright Act, 1957.  
5. Hacking is the unauthorized entry into a network or computer to steal or manipulate information, data, or files.
6. a) Delete the history of your web browser periodically.  
b) Clear the cache of your web browser regularly.  
c) Consult your parents about which website to view on the Internet.  
d) Don't share your personal information without your parent's permission.

**General Objectives:**

- To familiarize students with creating, formatting, and designing tables in MS Word.
- To teach students how to effectively use tables for presenting information in a tabular form.
- To introduce students to advanced table manipulation techniques such as splitting, merging, and styling.
- To introduce students the concept of charts and its relevance in easy interpretation of complicated series of data.

**Learning Outcomes:**

- Students can understand the concept of tables in MS Word and their utility in organizing information.
- Students can format tables by adjusting size, applying borders, and shading.
- Students can learn advanced table manipulation techniques including splitting cells, merging cells, and splitting tables.
- Students can demonstrate proficiency in designing tables by selecting appropriate styles and alignments.
- Students can use chart facility, identify different types of charts for easy interpretation of complicated data sets.

**Methodology:**

**Aim:** To equip students with the necessary skills to create, format, and design tables effectively using MS Word.

**Strategy:** Start the lesson with a brief explanation of the importance of tables in MS Word and their various applications. Provide step-by-step demonstrations of inserting tables using different methods, formatting tables, and performing advanced table manipulations. Introduce chart and its components. Discuss the different types of charts and their pictorial representation in any media.

**Expected Skills achieved by the learners:** Practical skills, Communication skills and Problem-solving skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Merge          2. Table          3. Cell          4. Split cell          5. Stock charts

**B Multiple choice question**

1. Charts          2. Merging          3. Treemap          4. Layout

**C Write T for True and F for False**

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

**D Match the following**

1. Alt+End          2. Up Arrow          3. Tab          4. Alt+Home

**E Answer in one or two words**

1. Insert tab          2. Merge group          3. One          4. Insert below option

**F Answer the following**

1. A table is an arrangement of text in the form of rows and columns.
2. A chart is a graphical representation of data. Charts display numeric data in a graphical format for easier understanding of large quantities of data and the relationship between different data series.
3. Cell Alignment is used to arrange the text in a cell more attractively. To apply cell alignment, select the cell and select any option from Alignment group.
4. You can enter the text in a table in the same way to enter text in a document. To move between the cells in a table, use arrow keys, mouse pointer or the Tab key.
5. Column Chart, Pie Chart, Line Chart.
6. Select the table. Click on Borders option on the Table Styles group from the Design tab. Select Borders and Shading option from the drop down list. A window named Borders and Shading appears. Select a line style from the Styles option. Select colour from Color option. Change line width from Width option.
7. Select the columns or rows which we want to delete. Click on Delete option on the Rows & Columns group. Select Delete Columns from the drop down list. Now the columns and rows which we want to delete are deleted from the table.
8. Click on the cell. Click on Insert Above option on Rows & Columns group. Type the content in the inserted row.

## SEMESTER - 1

(Based on chapters 1,2,3 and 4)

### A Fill in the blanks

1. Design      2. Identity theft      3. Cache      Virus      5. Stock Chart

### B Write T for True and F for False

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

### C Multiple choice questions

1. Web Browser      2. Tags      3. Google Meet      4. Stealing      5. Home tab

### D Match the following

1. Photos Sharing      2. Chart      3. Tab      4. Subscript      5. Bold    6. Up arrow

### E Answer the following questions

1. A table is an arrangement of text in the form of rows and columns.
2. Google Classroom is a free platform by Google for schools. It simplifies creating, distributing, and grading assignments. Its main goal is to streamline file sharing between teachers and students. It tracks student performance and allows exporting scores to the school's database. Teachers can access additional features with an Education account.
3. Click on the Start button. Choose Windows Accessories option from the Start button. Click on Notepad, type in the program.
4. When an attacker harasses a victim through emails, social media, chat rooms, blogs, instant messaging, etc., it is called cyber stalking.
5. Computer crimes are offenses committed using computers and smart devices connected through the internet. Victims of cyber crimes can be organizations or individuals.
6. It make decisions faster. Collaborate in real time. Stores and share files in the cloud.
7. A chart is a graphical representation of data. Charts display numeric data in a graphical format for easier understanding of large quantities of data and the relationship between different data series. There are several types of charts. Some common types of charts include Column Chart, Bar Chart, Line Chart, Radar chart, Area Chart, Radar chart, Tree map chart, Histogram chart etc.

TT- VI

5

MORE ON EXCEL

### General Objectives:

- To familiarize students with the basic features and functionalities of Microsoft Excel.
- To develop students' skills in using Excel for data entry, manipulation, and presentation.
- To provide students with the foundational knowledge required to effectively utilize Excel in various contexts, including academic, professional, and personal settings.

## Learning Outcomes:

- Define and identify a range of cells in an Excel worksheet.
- Demonstrate the ability to select and manipulate ranges of cells using various methods, including clicking and dragging, as well as keyboard shortcuts.
- Utilize the AutoFill feature to populate a series of numbers or characters in a specified range.
- Apply the AutoSum feature to calculate the total value of selected cells quickly and efficiently.
- Format worksheets by adjusting cell alignment, font styles, colors, and borders to enhance readability and visual appeal.

## Methodology:

**Aim:** To introduce students to the features of Microsoft Excel and provide hands-on practice to develop their skills in using Range, AutoFill, AutoSum, and Formatting functionalities.

**Strategy:** The lesson will employ a combination of theoretical explanation, demonstration, guided practice, and independent practice activities to ensure comprehensive understanding and mastery of the concepts.

**Expected Skills achieved by the learners:** Digital Literacy, Practical Skills.

## Lesson Activities:

### A Fill in the blanks

1. Worksheet
2. AutoSum
3. Editing
4. Ascending or Descending
5. Orientation
6. Text Alignment

### B Write T for True and F for False

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

### C Multiple choice questions

1. Formatting
2. Alignment
3. AutoSum
4. AutoFill

### D Match the following

1. Font
2. Bold
3. Text Rotation
4. Sigma Sign
5. Cells Group

### F Find five Excel related words in the given grid

M	O	S	H	E	E	T	R
I	N	O	E	X	E	T	E
S	P	R	I	T	N	L	M
A	U	T	O	S	U	M	O
I	T	I	R	A	T	E	V
C	Z	N	Z	C	E	L	L
B	Y	G	Y	S	A	B	B
Y	R	A	N	G	E	N	G

### F Answer the following

1. AutoSum feature is used to find the total value of the selected cells.
2. Formatting means arranging data in an attractive manner. Text Alignment and Text Formatting.

3. Sorting means arranging data in ascending or descending order.
4. Cell orientation option is used to rotate the text within a cell. It helps you to align data in different orientation according to the user's choice.
5. AutoFill is used to enter a series of numbers or characters in a specified range.
6. Text formatting options are used to change the font size, font colour, bold, italic, underline etc. Whereas Cell Formatting: Cell formatting options are used to change the cell colour, border colour, border style etc.

**General Objectives:**

- To introduce students to the fundamental concepts of programming.
- To familiarize students with basic programming constructs such as algorithms, flowcharts, loops, counters and pseudocode.
- To develop students' understanding of how computer programs are written and executed.

**Learning Outcomes:**

- Define a computer program and explain its importance.
- Describe algorithms and their role in program development.
- Create algorithms for simple tasks such as making an omelette or adding two numbers.
- Construct flowcharts to represent algorithms visually.
- Understand the concept of looping and apply it to solve repetitive tasks.
- Utilize pseudocode to outline program logic in a language-independent manner.

**Methodology:**

**Aim:** To facilitate student learning and understanding of programming concepts through a combination of theoretical explanations and practical examples.

**Strategy:** Start the lesson by discussing the importance of programming and its relevance in today's technological world. Introduce the concept of algorithms, explaining their role as step-by-step instructions for solving problems. Provide examples of algorithms for simple tasks and encourage students to create their own. Explain the purpose and significance of flowcharts in visualizing algorithms.

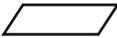
**Expected Skills achieved by the learners:** Cognitive Skills, Analytical skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Graphical 2. Stop 3. Rectangle 4. Flow 5. Pseudocode

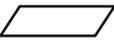
**B Multiple choice question**

1.  2.  3. Algorithm 4.  5. a symbols 6. Binary

**C Write T for True and F for False**

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

**D Match the following**

1.  2. High level Language 3. Pictorial representation 4.   
5.  6.  7. 

**E Answer the following**

1. A flowchart is a step by process to solve a problem in a pictorial form.
2. Oval - Start/ Stop box is used to represent starting and ending of a flowchart.  
Parallelogram- Input/ Output box is used to read and print any data.  
Rectangle- Processing box is used for calculation.
3. An Algorithm is a step -by-step process of solving any problem. It is the first step of developing a program.
4. A program is a set of instructions that makes the computer work. Some common high-level languages are BASIC, QBASIC, LOGO, C, C++, VISUAL BASIC, JAVA etc

**Assessment - 2**

**(Based on chapters 5 and 6)**

**A Fill in the blanks**

1. Editing 2. Orientation 3. Text Alignment 4. Stop

**B Write T for True and F for False**

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

**C Multiple choice questions**

1. Alignment 2. Symbols 3. Binary 4. Formatting

**D Answer the following**

1. Sorting means arranging data in ascending or descending order.
2. Formatting means arranging data in an attractive manner. Text Alignment and Text Formatting.
3. A program is a set of instructions that makes the computer work. Some common high-level languages are BASIC, QBASIC, LOGO, C, C++, VISUAL BASIC, JAVA etc.

**General Objectives:**

- To introduce students to the features and capabilities of Python programming language.
- To equip students with the fundamental skills required to write and execute Python programs.
- To familiarize students with different data types used in Python programming.

**Learning Outcomes:**

- Understand the features and characteristics of Python as a programming language.
- Write basic Python programs to perform simple tasks and calculations.
- Identify and utilize different data types such as integers, floats, strings, lists, and dictionaries in Python programming.

## Methodology:

**Aim:** To provide students with a foundational understanding of Python programming language, focusing on its features, basic syntax, and data types.

**Strategy:** The lesson will be delivered through a combination of interactive lectures, hands-on coding exercises, and group discussions. Visual aids such as slides and diagrams will be used to illustrate key concepts, while practical coding sessions will enable students to apply their knowledge in real-time.

**Expected Skills achieved by the learners:** Logical Thinking, Computational Thinking and Programming Skills.

## Lesson Activities:

### A Fill in the blanks

1. Compiler
2. .py
3. Ctrl+D, Ctrl+Q or type quit()
4. >>>

### B State True or False

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

### C Differentiate the Following

1. In Interactive mode, Python Interpreter waits for you to type commands and they go ahead and execute the command. Whereas In Script mode Python Interpreter runs a program from the source file.
2. The source file contains the program you prepared in the editor after you save it. Whereas the file containing the translated source code is called object file.

### E Answer the following

1. Python is a high level, general purpose programming language created by Guido Van Rossum. It was publicly released in 1991.
2. Keywords are the word which have fixed meaning and these meaning cannot be changed. The identifiers are user defined names. A valid identifier is a sequence of one or more letters, digits or underscore characters.
3.
  - Python is easy to learn
  - Python portable/ platform independent
  - Python is an interpreted language
  - Large standard libraries to solve common tasks etc.
4. Compiler, translates the source code to machine language.
5. To execute the Python script by choosing Run option or press Ctrl +F5.

## General Objectives:

- Introduce students to the concept of AI ethics and its relevance in personal and societal contexts.
- Familiarize students with various ethical issues surrounding AI, including bias, privacy, and access.
- Raise awareness about the potential impacts of AI on individuals and society.

- Encourage critical thinking and reflection on ethical considerations in AI development and implementation.

**Learning Outcomes:**

- Students can understand the importance of AI ethics in personal and professional settings.
- Students can identify and explain different ethical issues related to AI, such as bias, privacy, and access.
- Students can recognize the potential consequences of unethical AI practices on individuals and society.
- Students can discuss and analyse real-life examples of AI ethics violations.
- Students can reflect on the guiding values of AI ethics and their significance in AI development and implementation.

**Methodology:**

**Aim:** To engage students in critical discussions about AI ethics and its implications.

**Strategy:** Begin the lesson by presenting relatable scenarios related to ethics in personal and professional life. Use examples from everyday experiences to illustrate the importance of ethical considerations. Encourage students to share their thoughts and opinions on ethical dilemmas.

**Expected Skills achieved by the learners:** Analytical Thinking, Ethical Decision Making, Communication and Collaboration Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Access                      2. Designed    3. Three            4. Four    5. Emoji -Scavenger Hunt

**B State True or False**

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

**C Multiple choice questions**

1. Both a and b    2. AlphaGO

**D Answer the following**

1. AI ethics is the moral principles governing the behaviour or actions of humans as they design, make, use and treat AI systems. It is the part of technology ethics specific to AI systems.
2. Machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy.
3. Rock-Paper-Scissors, Mystery Animal and Emoji -Scavenger Hunt.
4. Privacy, Bias and Access.
5. Respect, Connect, Protect and Care.
6. ANN and DL are types of ML. ANN's structure mimics the human brain, with neurons in layers connected. DL is an approach using ANN with multiple layers. "Deep" refers to

many layers for complex processing. DL is considered powerful in helping computers learn, using concepts of the human brain and Deep Neural Network for learning.

7. Here are explanations for some common AI terminologies. **Machine Learning (ML)** is a branch of AI that uses data and algorithms to imitate human learning, improving accuracy over time. It's crucial in data science. **Artificial Neural Network (ANN)** is an ML model inspired by the human brain's structure, with interconnected nodes (neurons) in layers. It's used in deep learning. **Deep Learning (DL)** is a sub field of ML using deep neural networks with many layers. The "deep" refers to these layers, enabling complex processing and learning intricate patterns from data.

## Semester - 2

(Based on chapters 5, 6, 7 and 8 )

### A Fill in the blanks

1. Worksheet
2. Pseudocode
3. Ctrl+D, Ctrl+Q or type quit()
4. AI
5. Compiler

### B Write T for True and F for False

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

### C Multiple choice questions

1. AlphaGo
2. AutoSum
3. Mystery Animal
4. Both a and b
5. symbols

### D Match the following

1. Pictorial representation
2. Sigma Sign
3. Deep Learning
4. Python
5. Cells group
6. Bold

### E Answer the following

1. Python is a high level, general purpose programming language created by Guido Van Rossum. It was publicly released in 1991.
2. Oval - Start/ Stop box is used to represent starting and ending of a flowchart.  
Parallelogram- Input/ Output box is used to read and print any data.  
Rectangle- Processing box is used for calculation.
3. Cell orientation option is used to rotate the text within a cell. It helps you to align data in different orientation according to the user's choice.
4. AutoFill is used to enter a series of numbers or characters in a specified range.
5. AI ethics is the moral principles governing the behaviour or actions of humans as they design, make, use and treat AI systems. It is the part of technology ethics specific to AI systems.
6. Privacy, Bias and Access.
7. Python is easy to learn      Large standard libraries to solve common tasks  
Python is an interpreted language  
Python portable/ platform independent etc.

**General Objectives:**

- To introduce students to the concept of computer networks and their importance in modern society.
- To familiarize students with different types of computer networks and their characteristics.
- To provide an understanding of network protocols and their role in facilitating communication between devices.
- To discuss the advantages and disadvantages of computer networks and their impact on various aspects of life.

**Learning Outcomes:**

- Students can define what a computer network is and explain its significance in various sectors such as education, business, and communication.
- Students can identify different types of computer networks including LANs, WANs, MANs, and PANs, and describe their respective functionalities and coverage areas.
- Students can explain the concept of network protocols and provide examples of commonly used protocols such as TCP/IP, HTTP, FTP, IMAP, SMTP, and POP3.
- Students can discuss the advantages and disadvantages of computer networking.
- Students can evaluate the impact of computer networks on productivity, accessibility, and overall efficiency in organizations.
- Students can recognize the importance of network security measures in protecting against malware infections and unauthorized access.

**Methodology:**

**Aim:** To engage students in understanding the fundamentals of computer networks and fostering critical thinking about their implications in society.

**Strategy:** Begin the lesson by introducing the concept of computer networks through real-life examples such as the internet, intranet, and extranet. Utilize multimedia resources such as videos and diagrams to illustrate the structure and functioning of different types of computer networks. Encourage class discussions and group activities to explore the advantages and disadvantages of computer networking. Demonstrate practical examples of network protocols and their role in enabling communication between devices.

**Expected Skills achieved by the learners:** Critical Thinking Skills, Problem-Solving Skills & Communication skills.

**Lesson Activities:****A Fill in the blanks**

1. Internet
2. Network Protocol
3. Wired
4. Campus Area Network
5. Local Area Network

**B Write T for True and F for False**

1. F    2. T    3. F    4. T    5. F

**C Match the following**

1. US Defense    2. Entire City    3. CAN    4. FTP    5. Between Computers

**D Expand the following**

1. Post Office Protocol 3    2. Hyper Text Transfer Protocol    3. File Transfer Protocol  
4. Internet Message Access Protocol    5. Local Area Network

**E Fill the pyramid**

1. Intranet    2. ARPANET    3. Online    4. Modem    5. HTML    6. LAN

**F Identify the following networks**

1. Personal Area Network    2. Local Area Network    3. Wide Area Network  
4. Metropolitan Area Network    5. Campus Area Network

**G Who am I?**

1. Intranet    2. Extranet    3. Internet    4. ARPANET

**H Answer the following**

1. A computer network is a group of interconnected computers through cables, telephone lines, radio waves, satellites or infrared light beams. Each computer in a network is called a Node
2. File Transfer Protocol is used to transfer a file from one system to another, under the command of FTP user. Typically, FTP is used interactively by an online user.
3. Local Area Network (LAN) is a computer network covering a small physical area such as home, office, school, airport, hospital etc. Where as Wide Area Network (WAN) spans a wide geographical area such as cities, countries, continents or even the whole of the world.
4. Internet is a global communication accessed through the Web. Where as Intranet is the shared content accessed by members within a single organization.
5. The advantages of computer network are: Higher information security, Easy sharing of files, Faster resources sharing, Enhanced data reliability etc.
6. Network protocol is a set of rules which is used by computers to communicate with each other across a network.
7. Disadvantages of computer network are : Network setup costs, Malware infection, Impact on productivity, Expert assistance is required, Health issues etc.

**General Objectives:**

- To introduce students to the concept of lists, tables, and forms in HTML .
- To enable students to understand the structure and usage of lists, tables, and forms in web development.

## Learning Outcomes:

- Students can identify and differentiate between different types of lists in HTML, including unordered lists, ordered lists, and definition lists.
- Students can create and manipulate nested lists in HTML to organize and present information effectively.
- Students can construct tables in HTML for displaying tabular data, using appropriate tags and attributes.
- Students can understand the purpose and functionality of HTML forms in capturing user input on web pages.
- Students can implement basic form elements such as text fields, checkboxes, radio buttons, and submit buttons in HTML.

## Methodology:

**Aim:** To facilitate student learning and understanding of programming concepts through a combination of theoretical explanations and practical examples.

**Strategy:** Begin by explaining the importance of lists in structuring content on web pages. Introduce different types of lists (unordered, ordered, and definition lists) and their respective HTML tags. Use live coding or pre-prepared HTML files to demonstrate the creation of various types of lists. Encourage students to follow along and experiment with different list structures. Divide the class into small groups and assign each group a task to create a nested list representing a hierarchical structure (e.g., a menu or a directory).

**Expected Skills achieved by the learners:** Creativity Skills, Problem-solving skills & Communication Skills.

## Lesson Activities:

### A Fill in the blanks

1. Anchor
2. Radio button
3. Nested List
4. <TH> tag
5. Border colour light

### B Write T for True and F for False

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

### C Match the following

1. <LI>
2. <OL>
3. <DL>
4. <TD>
5. <TR>
6. <A>
5. Email linking

### D Write the Syntax of the following

1. <form> .....</form>
2. Unordered list: <UL TYPE="DISC"/>"CIRCLE"/>"SQUARE">
3. <br>
4. <a href="url" text></a>
5. <td colspan="number">
6. <OL TYPE="1"/>"A"/>"a"/>"I"/>"I" START="VALUE">

### E Multiple choice questions

1. Anchor
2. <OL>
3. Hyperlinks
4. <BR>
5. Cellspacing

### F Answer the Following

1. List are used to group related pieces of information together. There are three different types of list, they are

- \* <UL> - Unordered list: An unordered list is used when the items are to be displayed in any particular sequence.
  - \* <OL> - Ordered list: Ordered list specifies items in sequential, numerical order.
  - \* <DL> - Definition list: A definition list is a list of items, with description of each item.
2. The <TH> tag defines a header cell in an HTML table. Whereas <TD> tag stands for table cell, which defines standard cell in an html table.
  3. COLSPAN: Table cells can span across more than one column or row. Its attributes specifies width of the cell in terms of number of columns used when a cell occupies more than one column. ROWSPAN: It sets how many rows a cell spans. The ROWSPAN attribute specifies the number of rows a cell should span. It decides the height of the cell in terms of number of rows used when a cell occupies more than one row.
  4. Forms are used to accept input from a user. A form includes checkboxes, radio buttons lists etc.
  5. External linking, Internal linking and Email linking are the types of hyperlinks.

### Assessment - 1

(Based on chapters 1 and 2)

**A Fill in the blanks**

1. CAN                      2. Nested list    3. Anchor tag            4. Node

**B Write T for True and F for False**

1. T    2. T    3. T    4. F

**C Multiple choice questions**

1. PAN            2. href    3. Form

**D Expand the following**

1. Internet Message Access    2. Personal Area Network    3. File Transfer Protocol

**E Answer the following questions**

1. Network protocol is a set of rules which is used by computers to communicate with each other across a network.
2. Checkbox is an html element used to let a user select one or more options.

**General Objectives:**

- To introduce students to the concept of mobile apps and their significance in today's technological landscape.
- To familiarize students with the features and categories of mobile apps.
- To provide students with an overview of the process of developing mobile apps.

**Learning Outcomes:**

- Students can identify the features of mobile apps and their importance in daily life.

- Students can categorize different types of mobile apps based on their functionalities.
- Students can explain the basic process of developing a mobile app using tools like App Inventor.

**Methodology:**

**Aim:** To introduce students to the world of mobile apps and equip them with basic knowledge about their features, categories, and development process.

**Strategy:** The lesson will be delivered through a combination of lecture-based instruction, interactive discussions, and hands-on activities. Visual aids such as diagrams and examples will be used to enhance understanding.

**Expected Skills achieved by the learners:** Critical Thinking, Digital Literacy & Practical Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Productivity    2. Native and Web based    3.    4. Gaming    5. Design view

**B Multiple choice questions**

1. Apple    2. Scratch    3. Native    4. Component    5. App Store

**C Match the following**

1. Native Apps    2. OLX    3. PhotoMath    4. Uber    5. Skype

**D Write T for True and F for False**

1. F    2. T    3. F    4. F

**E Answer the following**

1. Native apps are apps which built specially for a mobile devices operating system.
2. View pane is the white area of the right of the palette, where we can view and arrange added components. Palette pane is on the left of the palette from where we can select components.
3. Hybrid apps are a mix of native and web based apps. They are made support to web and native technologies across multiple platforms. They are developed using softwares like HTML, CSS, Java Script and J Query etc.
4. Click on the Play Store icon on the screen. Type the name of the app you want to install in the Search box. Click on the app you want to install. Click on the Install option.
5. Web apps are application software that runs in a web browser. Web apps are actually web application which gives a user with experience similar to native apps. OLX, Flip cart, Amazon etc are some examples of web apps.

**General Objectives:**

- To introduce students to the basics of Microsoft Excel and its applications.
- To familiarize students with the interface, functions, and features of MS Excel.
- To enable students to perform basic calculations, data organization, and analysis using MS Excel.

## Learning Outcomes:

- Students can navigate through Microsoft Excel interface and understand its basic functions.
- Students can enter and edit data in rows and columns within Excel worksheets.
- Students can select and manipulate cells, columns, and rows effectively.
- Students can understand and apply basic formulas for calculations in MS Excel.
- Students can utilize operators in MS Excel for performing arithmetic, logical and text operations.
- Students can perform data validation to restrict input within specific ranges or criteria.

## Methodology:

**Aim:** To provide students with a comprehensive understanding of Microsoft Excel and its applications.

**Strategy:** The lesson will be conducted using a combination of theoretical explanations, practical demonstrations, and hands-on activities.

**Expected Skills achieved by the learners:** Cognitive Skills, Technological skills and Practical skills.

## Lesson Activities:

### A Fill in the blanks

1. Workbook
2. Home
3. Unmerge Cells
4. Column
5. Ctrl+;
6. Flash Fill
7. Cell Pointer
8. Numeric

### B Multiple choice questions

1. AutoFill
2. Merging
3. Three
4. Relational
5. Data
6. Ctrl+Shift+:

### C Match the following

1. <=
2. &
3. OR
4. Paste
5. Worksheet

### D Write T for True and F for False

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

### E Write the use of following shortcut key

1. To select entire row
2. Navigates sheets upward
3. Navigates sheets downward
4. To insert current time in a cell
5. To insert current date in a cell
6. To select entire column

### F Answer the following

1. All expressions are evaluated from left to right. BODMAS rule, the brackets have to be solved first followed by powers or roots (ie of), then Division, Multiplication, Addition, and at the end Subtraction.
2. AutoFill is the easiest method to fill data in cells automatically. Flash Fill is a feature that fills the data in cells by picking up the pattern set.
3. Text Formula, Numeric formula and Logical formula.
4. Data and information arranged in rows and columns is known as Worksheets .One or more worksheet together called a workbook.
5. 1.G20    2.H50

## SEMESTER - 1

(Based on chapters 1, 2, 3 and 4)

### A Fill in the blanks

1. LAN 2. Home 3. App Inventor 4. Nested list 5. Wired 6. Numeric

### B Multiple choice questions

1. Three 2. <BR> 3. Scratch 4. Ctrl+Shift+: 5. Play store

### C Match the following

1. Skype 2. FTP 3. <OL> 4. <DL> 5. return logical result

### D Write T for True and F for False

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

### E Answer the following

1. Native apps are apps which built specially for a mobile devices operating system.
2. The <TH> tag defines the header cell in an HTML table whereas <TD> tag stands for a table cell which defines standard cell in an HTML table.
3. The advantages of computer network are: Higher information security, Easy sharing of files, Faster resources sharing, Enhanced data reliability etc.
4. Data and information arranged in rows and columns is known as Worksheets .One or more worksheet together called a workbook.
5. Forms are used to accept input from a user. A form includes checkboxes, radio buttons lists etc.
6. Web apps are application software that runs in a web browser. Web apps are actually web application which gives a user with experience similar to native apps. OLX, Flipkart, Amazon etc are some examples of web apps.

TT- VII

5

FUNCTIONS IN MS EXCEL

### General Objectives:

- To familiarize students with the concept of functions in MS Excel.
- To enable students to understand the various uses of functions in MS Excel.
- To introduce students to the Function Wizard in MS Excel.

### Learning Outcomes:

- Students can understand the concept of functions in MS Excel.
- Students can identify and utilize different functions in MS Excel for simple and complex calculations.
- Students can demonstrate the ability to use the Function Wizard to insert and apply functions accurately.

### Methodology:

**Aim:** To provide students with a comprehensive understanding of functions in MS Excel and how

to use them effectively.

**Strategy:** The lesson will employ a combination of lectures, demonstrations, hands-on exercises, and interactive sessions to engage students in learning about functions in MS Excel.

**Expected Skills achieved by the learners:** Practical skills, Critical Thinking skills and Problem-Solving Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Complex
2. Syntax
3. SQRT(Number)
4. Logical
5. Function Wizard
6. Mathematical

**B Write T for True and F for False**

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

**C Multiple choice questions**

1. Max()
2. Min
3. POWER
4. COUNT

**D Match the following**

1. Number of cells with in a range
2. Add values in a specified criteria
3. Check more than one condition
4. To find length of a string
5. To find factorial of a number

**E Answer the following**

1. The values inside the brackets in a formula are called arguments. Arguments can be numbers, text, logical values, array, cell references, constants, formulas or other functions
2. A POWER in Excel function that computes and returns the result of a number raised to a power. *Syntax:* =POWER (Number, power) Example : POWER (5,3) returns 125.  $5^3$  means 5 to the power 3 is equal to 125.
3. A set of rules for doing something in an orderly manner is called syntax.
4. Example of MAX: =MAX(5, 13, 3, 7, 6) will return 13.  
Example of MIN: =MIN(4, 7, 6, 2, 9) will return 2.
5. Date and time functions are used to display the date or time in a cell. It can also make some calculations.
  - \* TODAY *Syntax:*=TODAY()
  - \* DAY360("2024-01-01", "2024-06-01")
6. SUMIF function adds the values in cells specified by a given condition/criteria. It can add the number that meet the given condition or you can make the sum range of cells or a column with respect to the data in another column.

**General Objectives:**

- To introduce students to Adobe Animate and its basic functionalities.
- To familiarize students with the tools available in Adobe Animate.
- To teach students how to open, save, and close files in Adobe Animate.

**Learning Outcomes:**

- Students can identify the purpose of Adobe Animate and its role in creating animations.
- Students can navigate and use the different tools available in Adobe Animate.
- Students can demonstrate the process of opening, saving, and closing files in Adobe Animate.

**Methodology:**

**Aim:** To provide students with a foundational understanding of Adobe Animate and its essential features.

**Strategy:** The lesson will employ a combination of theoretical explanations, demonstrations, and hands-on practice to ensure comprehension and practical application of Adobe Animate.

**Expected Skills achieved by the learners:** Technical Skills, Creativity, Digital Literacy Skills.

**Lesson Activities:****A Fill in the blanks**

1. Zoom
2. Adobe Animate
3. Rectangular
4. Free transformation
5. Current Scene
6. File
7. Animation
8. Four
9. Layers

**B Multiple choice questions**

1. Brush Tool
2. Hand Tool
3. Ctrl+G
4. Pen Tool
5. Library Tool

**C Match the following**

1. Menu Bar
2. Work area
3. Timeline
4. Library
5. Tool Panel
6. Stage

**D Answer the following**

1. Animation is a method by which a sequence of still figures are manipulated to appear as moving objects.
2. Lasso Tool is used to select an object or a part of an object by drawing selection outline around it. Selection tool is used to select an object and to move them.
3. Brush tool is used to create brush like strokes while drawing or painting. Fluid brush tool works like brush tool but does not smoothen the lines.
4. The Tool Area, View Area, Color Area and Option Area are the four division of Tool Panel.
5. Timeline panel determines the order in which your frames and layers appear and how long each frame will stay on stage. It organises and controls the contents in layers and frames.

**Assessment - 2**  
**(Based on chapters 5 and 6)**

**A Fill in the blanks**

1. Rectangular                      2. Function Wizard   3. File   4. Mathematical

**B Write T for True and F for False**

1. F   2. F   3. T   4. F

**C Multiple choice questions**

1. MIN              2. Library tab

**D Answer the following**

1. Animation is a method by which a sequence of still figures are manipulated to appear as moving objects.
2. A set of rules for doing something in an orderly manner is called syntax.
3. Brush tool is used to create brush like strokes while drawing or painting. Fluid brush tool works like brush tool but does not smoothen the lines.

TT-VII

7

**MORE ON PYTHON**

**General Objectives:**

- To provide an in-depth understanding of data types in Python.
- To familiarize students with Python input and output mechanisms.
- To introduce the concept of constants and their usage in Python programming.

**Learning Outcomes:**

- Define and differentiate between different data types in Python, such as integers, floats, and strings.
- Demonstrate the ability to use Python's built-in functions to determine the data type of a given literal.
- Utilize Python's input () function to receive user input and store it in variables for further processing.
- Explain the concept of constants and identify their naming conventions in Python programming.
- Apply escape sequences in Python to handle special characters in strings for better formatting and display.

**Methodology:**

**Aim:** To engage students actively in learning about data types, input/output mechanisms, and constants in Python through a combination of theoretical explanations, interactive examples, and hands-on activities.

**Strategy:** Begin by explaining the concept of data types and their significance in programming. Provide examples of different data types and discuss their characteristics. Use Python's

interactive shell to demonstrate various data types, literals, and their corresponding functions (e.g., type()). Encourage students to follow along and experiment with different literals. Introduce Python's input() function and explain how it can be used to receive user input.

**Expected Skills achieved by the learners:** Problem Solving, Computational Thinking and Creativity Skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Type()
2. Constant's
3. input()
4. Lower case
5. Variables
6. Comments
7. backslash (\)

**B Write T for True and F for False**

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

**C Answer the Following**

1. Constants are variables whose values do not change during the lifetime of the program.

The upper case letters are used to separate variable from an ordinary variable.

```
>>>
```

```
>>> MY_CONST = 100 # a constant
```

```
>>>
```

You are even allowed to change the value of MY\_CONST constant by assigning new value to it as follows:

```
>>>
```

```
>>> MY_CONST = "new value"
```

2. Escape sequences are set of special characters used to print characters which can't be typed directly using the keyboard. Each escape sequences starts with a backslash character. The following are some common escape sequences.

\n :- Newline      \' :- Single quote      \b :- ASCII Backspace      \t :- Tab  
\" :- Double quote      \f :- ASCII Form feed      \\ :- Backslash      \a :- ASCII Bell  
\r :- ASCII Carriage Return      \v :- ASCII Vertical Tab

3. The following base data types are used in python.

- a) Integer :- 12, -999, 0, 3434, etc
- b) Real numbers :- 4.5, -25.4211, 0.00003 etc
- c) Characters :- 'hello', '100', '\$##\$', etc

4.
  - 1 Can be of any size.
  - 2 Have allowed characters, which are a-z, A-Z, 0-9 and underscore (\_)
  - 3 Should begin with an alphabet or underscore.
  - 4 Should not be a keyword.

**General Objectives:**

- Introduce students to the concept of AI project development and its importance in modern technology.
- Familiarize students with the various steps involved in the AI project cycle.
- Provide an understanding of the classification process and its significance in AI projects.

**Learning Outcomes:**

- Students can explain the overview of AI project development.
- Students can identify and understand the different steps involved in the AI project cycle: Problem Scoping, Data Acquisition, Data Exploration, Modelling, and Evaluation.
- Students can define the concept of classification and its role in AI projects.

**Methodology:**

**Aim:** To introduce students to the systematic process of AI project development and the AI project cycle. To provide a clear understanding of the steps involved in the AI project cycle and the concept of classification.

**Strategy:** Begin the lesson by engaging students with a brief discussion on the importance of AI in modern technology and its applications. Introduce the concept of the AI project cycle and its five steps: Problem Scoping, Data Acquisition, Data Exploration, Modelling, and Evaluation. Provide examples and illustrations to help students grasp each step effectively. Use real-life scenarios and case studies to demonstrate the practical application of the AI project cycle. Incorporate interactive activities such as group discussions, brainstorming sessions, and hands-on exercises to encourage active participation and reinforce learning.

**Expected Skills achieved by the learners:** Problem-solving skills, Communication skills and Critical Thinking Skills.

**Lesson Activities:****A Fill in the blanks**

1. AI Project cycle    2. Data Moulding    3. Problem scoping    4. Data acquisition

**B Write T for True and F for False**

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

**C Answer the Following**

1. Problem Scoping is the initial step in an AI project where the problem to be solved is identified. Data Acquisition follows, involving the collection of relevant data. Data Exploration is then conducted to extract useful information from the acquired data. Next, a model is created using the collected data, capable of learning and making decisions. Finally, an evaluation of the model's predictions is crucial to determine its overall performance.

2. To implement the data acquisition step of security problem, we can follow the below mentioned pointers.
  - a) Collect the details of staff and store it in a database along with the images.
  - b) Store the biometric data for authorized users.
  - c) Collect data about the bank premises, including the images.
  - d) Stream the video footage of the locker visitors.
  - e) Store the images of suspected criminals.
3. Data Visualization is a core part of this Data Exploration . It is nothing but the graphical representation of both information and data. By using visual elements like charts, graphs, and maps, data visualization tools provide an accessible way to see and understand trends, outliers, and patterns within that data.
4. Model is a copy of something usually smaller than the original object.
5. 1) Data Collection 2) Data Preparation 3) Feature Extraction 4) Model Selection  
5) Model Training 6) Model Evaluation 7) Model Deployment 8) Monitoring and Maintenance

## **Semester - 2**

**(Based on chapters 5, 6, 7 and 8 )**

### **A Fill in the blanks**

1. Zoom tool    2.SQRT    3. Lower case    4. File    5. Select    5. Comment    6. Four

### **B Multiple Choice Question**

1. Hand Tool    2. Max()    3. AI Project Cycle    4. Library tab

### **C Match the following**

1. Stage            2. To find length of a string                    3. Tool panel    4. To find factorial  
of a number        5. Work area

### **D Write T for True and F for False**

1. T    2. T    3. T    4. T    5. F

### **E Answer the following**

1. 1) Data Collection 2) Data Preparation 3) Feature Extraction 4) Model Selection  
5) Model Training 6) Model Evaluation 7) Model Deployment 8) Monitoring and Maintenance
2. A set of rules for doing something in an orderly manner is called syntax.
3. Brush tool is used to create brush like strokes while drawing or painting. Fluid brush tool works like brush tool but does not smoothen the lines.
4. 1 Can be of any size.  
2 Have allowed characters, which are a-z, A-Z, 0-9 and underscore ( \_ )  
3 Should begin with an alphabet or underscore.  
4 Should not be a keyword.

5. Problem Scoping is the initial step in an AI project where the problem to be solved is identified.

Data Acquisition follows, involving the collection of relevant data.

Data Exploration is then conducted to extract useful information from the acquired data.

Next, a model is created using the collected data, capable of learning and making decisions. Finally, an evaluation of the model's predictions is crucial to determine its overall performance.

6. Example of MAX: =MAX(5, 13, 3, 7, 6) will return 13.

Example of MIN: =MIN(4, 7, 6, 2, 9) will return 2.

TT-8

1

## ETHICAL HACKING

### General Objectives:

- To introduce students to the concept of hacking and its various forms.
- To raise awareness about the ethical implications of hacking activities.
- To familiarize students with the potential consequences of cyberattacks.
- To explore the importance and applications of ethical hacking in cyber security.
- To understand the different types of hackers and their motivations.

### Learning Outcomes:

- Students can define computer hacking and identify different types of hacking activities.
- Students can recognize the ethical implications of hacking and differentiate between ethical and unethical hacking practices.
- Students can describe the potential consequences of cyberattacks on individuals, organizations, and nations.
- Students can explain the concept of ethical hacking and its role in testing and improving cyber security measures.
- Students can identify various types of hackers based on their intentions and methods.

### Methodology:

**Aim:** To provide students with a comprehensive understanding of hacking, including its types, ethical considerations, consequences, and the importance of ethical hacking in cyber security.

**Strategy:** Begin the lesson by defining hacking and providing examples of different types of hacking activities, such as malware attacks, phishing, and ethical hacking. Engage students in discussions about the ethical implications of hacking and its impact on privacy, security, and society. Utilize real-life case studies or examples to illustrate the consequences of cyberattacks and the importance of cybersecurity measures. Introduce the concept of ethical hacking and its role in identifying and addressing security vulnerabilities.

**Expected Skills achieved by the learners:** Critical Thinking, Ethical Awareness & Communication skills.

## Lesson Activities:

### A Fill in the blanks

1. Hacker
2. Blue Hat Hackers
3. Malware
4. White Hat Hackers
5. MitMA - Man in the Middle Attack

### B Multiple choice questions

1. Cyber attack
2. Hackivist
3. Script kiddie
4. Brute force attack

### C Answer the following

1. Ethical hacking involves finding weaknesses in a computer or network system for testing purpose and finally getting them fixed.
2. a) Data Breaches    b) Financial Losses    c) Service Disruption
3. Malware Attacks: Malicious software, also known as malware, that infects a system and spreads without the user's knowledge or consent, damaging files, stealing data, or gaining unauthorized access.

Ransomware Attacks: Ransomware is an advanced form of malware that encrypts the victim's data and demands a ransom payment to effectively release and restore access to the files or system.

Phishing Attacks: Phishing is the fraudulent attempt to capture sensitive information (such as passwords, login credentials, or financial data) by pretending to be a legitimate or trustworthy entity via email, phone, or website.

4. A person doing something illegal with a computer belonging to someone else without asking for permission from the owner is called a hacker.
5. a) White Hat Hackers    b) Black Hat Hackers    c) Grey Hat Hackers

TT-8

2

**DYNAMIC WEB PAGE IN HTML 5**

### General Objectives:

- To introduce students to the concept of dynamic web pages.
- To familiarize students with embedding audio, video, and frames in HTML 5.
- To provide students with basic skills in JavaScript for creating interactive web pages.

### Learning Outcomes:

- Students can embed audio and video elements into HTML documents.
- Students can create dynamic web pages using JavaScript.
- Students can utilize input and output functionalities in JavaScript.
- Students can understand the concept and implementation of frames in HTML.

### Methodology:

**Aim:** To engage students in hands-on activities to explore and understand the concepts of embedding multimedia elements and frames in web pages, as well as to introduce them to JavaScript for enhancing web page interactivity.

**Strategy:** Begin the lesson with an interactive lecture explaining the importance of multimedia elements and frames in web design, and introduce the basic syntax and usage of <audio>, <video>, and <frame> tags. Demonstrate how to embed audio, video, and frames in an HTML document using code examples. Provide students with exercises to practice embedding audio, video, and frames in HTML documents. Encourage experimentation with different attributes and settings.

**Expected Skills achieved by the learners:** Cognitive Skills, Creative skills and Practical skills.

**Lesson Activities:**

**A Fill in the blanks**

1. Brendan Eich
2. text based programming
3. Src
4. Frames
5. expression

**B Multiple choice questions**

1. JavaScript
2. ALIGN=TOP
3. <Script>
4. //

**C Write T for True and F for False**

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

**D Answer the following**

1. JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive and Dynamic.
2. The programming instructions written in a program in a JavaScript are known as statements, and a collection of statements is called a script or a program.
3. Src, Align, Hspace, Vspace and Width.
4. JavaScript is used as both- client side and server- side application.  
JavaScript gives the user enhanced control over the browser.  
It is used with HTML code and run on web browsers.  
JavaScript is an interpreter based scripting language.  
JavaScript is case sensitive.
5. Operators are used to perform specific mathematical and logical computations on operands. In other words, we can say that an operator operates the operands. In JavaScript operators are used to compare values, perform arithmetic operations etc.  
There are various operators supported by JavaScript. Some of the examples of operators are +(Addition), -(Subtraction), \*(Multiplication), /( Division) etc.
6. Hspace: This attribute specifies the horizontal space around the image. That means hspace attribute is used to leave a fixed space on left and right side of an image.  
<IMG SRC="F:\dance.jpeg" HSPACE=20>

Vspace: This attribute specifies the vertical space around the image. That means, vspace attribute is used to leave a fixed space on top and bottom side of an image.

```
<IMG SRC="F:\dance.jpeg" VSPACE=25 HSPACE=20 >
```

## Assessment - 1

(Based on chapters 1 and 2)

### A Fill in the blanks

1. White hat
2. Hspace
3. Brendan Eich.
4. Malicious software also known as ..... ans) Malware

### B Write T for True and F for False

1. T
2. T
3. F

### C Multiple choice question

1. JavaScript
2. <Script>

### D Answer the following questions

1. JavaScript is used as both- client side and server- side application.

JavaScript gives the user enhanced control over the browser.

It is used with HTML code and run on web browsers.

JavaScript is an interpreter based scripting language.

JavaScript is case sensitive.

2. Malware Attacks: Malicious software, also known as malware, that infects a system and spreads without the user's knowledge or consent, damaging files, stealing data, or gaining unauthorized access.

Ransomware Attacks: Ransomware is an advanced form of malware that encrypts the victim's data and demands a ransom payment to effectively release and restore access to the files or system.

Phishing Attacks: Phishing is the fraudulent attempt to capture sensitive information (such as passwords, login credentials, or financial data) by pretending to be a legitimate or trustworthy entity via email, phone, or website.

3. Src, Align, Hspace, Vspace and Width.

TT-8

3

ADOBE PHOTOSHOP CC 2014

### General Objectives:

- Familiarize students with Adobe Photoshop CC 2014 and its features.
- Introduce students to the Photoshop workspace and its components.
- Enable students to understand the basics of setting up documents and saving files in Photoshop.
- Introduce students to various selection tools and their functionalities.

- Provide students with an overview of essential Photoshop tools for image editing and creation.

### **Learning Outcomes:**

- Students can understand the basic functions and features of Adobe Photoshop CC 2014.
- Students can navigate and identify key components of the Photoshop workspace.
- Students can recognize and utilize various tools available in Photoshop for image editing and creation.
- Students can demonstrate the ability to set up documents correctly and save files using appropriate file formats.
- Students can utilize selection tools effectively to select and manipulate portions of an image.
- Students can apply basic editing techniques using tools such as the Brush Tool, Eraser Tool, and Type Tool.

### **Methodology:**

**Aim:** To introduce students to Adobe Photoshop CC 2014 and its fundamental tools and features.

**Strategy:** Begin the lesson by providing an overview of Adobe Photoshop CC 2014 and its significance in image editing and creation. Demonstrate the process of starting Adobe Photoshop CC 2014, navigating the workspace, and identifying key components such as the Document Window, Panels, Menu Bar, and Tools Panel/Option Bar. Introduce students to setting up documents and saving files in Photoshop, emphasizing the importance of proper planning and file formats. Discuss various selection tools available in Photoshop, including Marquee Tools, Lasso Tools, Quick Selection Tool, Magic Wand Tool, and Crop Tool, and demonstrate their usage through practical examples.

**Expected Skills achieved by the learners:** Digital Literacy, Creativity Skills, Critical Thinking and Problem-Solving Skills.

### **Lesson Activities:**

#### **A Fill in the blanks**

1. Thomas and John Knoll
2. Tools
3. Lasso
4. Selection
5. Wrapping

#### **B Multiple choice questions**

1. Marquee
2. Type
3. psd
4. Ctrl+D

#### **C State T for True and F for False**

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

#### **D Identify the following tools**

1. Type tool
2. Move tool
3. Brush tool
4. Pen tool

## E Answer the Following

1. A user-friendly interface, Advanced image adjustments, Edit motion based material, Produce multiple or complex images and Create graphics with reduced file size.
2. Marquee Tools, Lasso Tools, Quick Selection Tool, Magic Wand Tool and Crop Tool.
3. Option bar provides options related to the tool currently selected in the Tools panel. For example, to choose the thickness of the Brush Tool selected in the Tools panel, we use the Options bar.
4. Rectangle Marquee Tool, Elliptical Marquee Tool, Single Row Marquee Tool and Single Column Marquee Tool.

TT-8

4

**MORE ON ADOBE PHOTOSHOP CC 2014**

### General Objectives:

- Introduce students to additional tools available in Adobe Photoshop for image editing.
- Provide an understanding of the concept of layers and their significance in image composition.

### Learning Outcomes:

- Students can identify and explain the functions of various tools in Adobe Photoshop, such as the Spot Healing Brush, Clone Stamp, Art History Brush, Gradient Tool, Blur Tool, Sharpen Tool, Smudge Tool, Dodge Tool, Burn Tool, Sponge Tool, Hand Tool, Magnify Tool, and Colour Replacement Tool.
- Students can demonstrate proficiency in using these tools to manipulate and enhance images effectively.
- Students can describe the purpose and utility of layers in Photoshop and understand how to create, manipulate, and organize them to compose images.

### Methodology:

**Aim:** To deepen students' understanding of image editing tools in Adobe Photoshop and introduce them to the concept of layers.

**Strategy:** Begin the lesson by revisiting the previous chapter on image editing features and tools in Adobe Photoshop. Introduce new tools such as the Spot Healing Brush, Clone Stamp, Art History Brush, Gradient Tool, etc., explaining their functions and demonstrating their usage through practical examples. Provide hands-on practice opportunities for students to use these tools on sample images or projects. Transition to the concept of layers, explaining their importance in image composition and demonstrating how to create, manipulate, and organize layers effectively.

**Expected Skills achieved by the learners:** Digital Literacy, Creativity Skills, Critical Thinking and Problem-solving Skills.

### Lesson Activities:

#### A Fill in the blanks

1. Blur
2. Art History Brush Tool
3. Lasso
4. Sharpen Tool

**B Write T for True and F for False**

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

**C Identify the following tools**

1. Dodge Tool 2. Magic Wand tool 3. Hand Tool 4. Crop Tool  
5. Art History Brush Tool 6. Colour Replacement Tool

**D Find the following abbreviations**

1. Photoshop Document 2. Joint Photographic Exports Group  
3. Graphics Interchange Formats 4. Cyan Magenta Yellow and Key  
5. Red Green Blue 6. Tag Image File Format

**E Answer the Following**

1. Smudge tool is used to smear the paint on the canvas. It gives an effect of finger painting. Dodge tool is used to lighten dark areas of the image.
2. Layers are the transparent sheets that can hold objects and are stacked or moved to create the image composition.
3. Step 1: Open an image of a scenery.  
Step 2: Select the Gradient tool from the Toolbox.  
Step 3: Double click on the Gradient Sample box in the Options bar. The Gradient Editor dialog box appears.  
Step 4: Select a Preset gradient fill or create a New gradient fill in the Gradient Editor dialog box.  
Step 5: Click on OK to close.  
Step 6: Choose an appropriate gradient type in the Options bar.

**Semester - 1**

**(Based on chapters 1, 2, 3 and 4 )**

**A Fill in the blanks**

1. Malwarer 2. Selection 3. Text based programming  
4. Sharpen Tool 5. Wrapping text 6. Grey hat hackers

**B Multiple choice questions**

1. Marquee 2. Type 3. Ctrl + D 4. Cyberattack

**C Identify the following tools**

1. Dodge tool 2. Magic tool 3. Type tool 4. Crop tool  
5. Art history brush tool 6. Pen tool

**D Write T for True and F for False**

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

**E Answer the following**

1. Step 1: Open an image of a scenery.  
Step 2: Select the Gradient tool from the Toolbox.

Step 3: Double click on the Gradient Sample box in the Options bar. The Gradient Editor dialog box appears.

Step 4: Select a Preset gradient fill or create a New gradient fill in the Gradient Editor dialog box.

Step 5: Click on OK to close.

Step 6: Choose an appropriate gradient type in the Options bar.

2. JavaScript is a text-based programming language used both on the client-side and server-side that allows you to make web pages interactive and Dynamic.
3. Layers are the transparent sheets that can hold objects and are stacked or moved to create the image composition.
4. This tool allows you to duplicate the parts of an image by taking the sample image and apply over another image or a part of the same image.
5. Rectangle Marquee Tool, Elliptical Marquee Tool, Single Row Marquee Tool and Single Column Marquee Tool.
6. a) White Hat Hackers      b) Black Hat Hackers      c) Grey Hat Hackers

**General Objectives:**

- To familiarize students with the latest cyber trends including E-commerce, Blockchain, Artificial Intelligence, Augmented Reality, Virtual Reality, 3D Printing, and Robotic Process Automation.
- To provide an understanding of the applications and significance of these technologies in various fields.
- To equip students with the knowledge necessary to adapt to and thrive in a technology-driven world.

**Learning Outcomes:**

- Students can identify and explain the concepts of E-commerce, Blockchain, Artificial Intelligence, Augmented Reality, Virtual Reality, 3D Printing, and Robotic Process Automation.
- Students can describe the different types and models of E-commerce businesses.
- Students can analyse the applications and benefits of E-commerce, Electronic Fund Transfer, Blockchain, AI, AR, VR, 3D Printing, and RPA in different sectors.
- Students can discuss the potential risks and challenges associated with these technologies.
- Students can appreciate the importance of these technologies in shaping the future of various industries.

**Methodology:**

**Aim:** To engage students actively in learning about cyber trends through a combination of theoretical knowledge, practical examples, and interactive discussions.

**Strategy:** Introduce each cyber trend with a brief explanation and real-life examples. Use

multimedia presentations, videos, and case studies to illustrate the applications and significance of each technology. Encourage active participation through group discussions, brainstorming sessions, and problem-solving activities related to each topic.

**Expected Skills achieved by the learners:** Cognitive Skills & Communication skills.

**Lesson Activities:**

**A Fill in the blanks**

1. M-Commerce
2. Robotics
3. Virtual
4. E-commerce

**B Multiple choice questions**

1. 3D printing
2. Prospector
3. 5G
4. 3D printing
5. Mixed Reality

**C Match the following**

1. NLP
2. Bio-printing
3. E-shopping
4. Chatbot
5. E-cash

**D Answer the following**

1. AI is the branch of computer science that aims at creating expert and intelligent computer systems which stimulates certain human qualities such as learning, reasoning, communicating, seeing, hearing and sensation.
2. IoT is a network in which all physical objects are connected to the internet through network devices or routers and exchange data. IoT allows objects to be controlled remotely across existing network infrastructure. IoT is a very good and intelligent technique which reduces human effort as well as easy access to physical devices.
3. Blockchain refers to the system of recording information which makes it difficult or impossible to change, hack or cheat the system. This record of every transaction is updated and added to the participant's ledger.
4. E-commerce is the buying and selling of goods and services, or the transmission of funds or data, over an electronic network, primarily the Internet.
5. Augmented reality (AR) is an enhanced version of the real physical world that is achieved through the use of digital visual elements, sound or other sensory stimuli and delivered via technology. Images are created by developers within applications that blend in with content in the real world.  
Virtual Reality (VR) is a computer-generated environment with scenes and objects that appear to be real, making the user feel they are immersed in their surroundings.
6. Education, Prototyping and Manufacturing, Medicine, Construction, Automotive and Art and Jewellery.
7. RPA is the technology used for software tools that automate human tasks, which are manual, rule-based or repetitive. Typically, it is like a bot that performs such tasks at a much higher rate than a human alone.
8. This type of software comprises of camera and connections between the patterns stored

in the database and the perceived patterns. Facial recognition software, video surveillance cameras, fingerprint identification and automatic voice recognition software are some examples of pattern recognition software.

**General Objectives:**

- To understand the concept of databases and database management systems (DBMS).
- To comprehend the importance and advantages of using a DBMS.
- To learn about SQL and its role in managing data within a database.
- To explore the structure of a relational database and its components.
- To gain practical skills in creating, modifying, and retrieving data from a database.

**Learning Outcomes:**

- Students can define what a database and a DBMS are and explain their significance.
- Students can enumerate the advantages of using a DBMS over traditional file systems.
- Students can identify common examples of relational database management systems (RDBMS).
- Students can describe the structure of a database and understand the hierarchy of data organization within it.
- Students can demonstrate the ability to create and modify tables in a relational database using SQL.
- Students can retrieve data from a database using SQL queries.
- Students can understand the concepts of primary keys, foreign keys, and alternate keys in the context of RDBMS.
- Students can explain the importance of data integrity and security in database management.
- Students can discuss the role of SQL as a standard language for managing relational databases.

**Methodology:**

**Aim:** To introduce students to the fundamentals of databases, DBMS, and SQL, enabling them to understand the importance of efficient data management in various domains.

**Strategy:** Begin the lesson by engaging students with real-world examples of organizations utilizing databases for data management. Use interactive discussions to elucidate the concept of databases, emphasizing their organization and management through DBMS. Introduce SQL through practical examples and demonstrations, allowing students to create and manipulate databases using SQL commands. Employ hands-on exercises and group activities to reinforce learning and encourage active participation. Provide opportunities for students to apply their knowledge by solving database-related problems.

**Expected Skills achieved by the learners:** Practical skills, Critical Thinking skills and Communication Skills.

**Lesson Activities:****A Fill in the blanks**

1. Data
2. Database
3. Redundancy or duplication
4. Tables
5. Row

## **B Multiple Choice Questions**

1. Attribute
2. Candidate key
3. Foreign
4. data definition language
5. SQL INSERT

## **C State whether true or false**

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

## **D Answer the following**

1. Database Management System is a software program that enables you to create, modify and extract data from a database. DBMS allows user and other software to store and retrieve data in a structure way.

2. Candidate Key: The minimal set of attributes that can uniquely identify a tuple is known as a candidate key. In the following example, the ID, Roll Number, and mail ID column has he candidate key meaning records of these columns do not have any duplicate value and it can be used to identify data of the table.

Primary Key: There can be more than one candidate key in relation out of which one can be chosen as the primary key. In the following example, the ID column has the primary key meaning records of the ID column do not have any duplicate value and it can be used to identify data of the table.

3. a. The basic use of SQL for data professionals and SQL users is to insert, update, and delete the data from the relational database.

b. SQL allows the data professionals and users to retrieve the data from the relational database management systems.

c. It also helps them to describe the structured data.

4. The syntax is as follows:

```
CREATE DATABASE database_name;
```

In this syntax, database\_name specifies the name of the database which we want to create in the system. We have to type the database name in query just after the 'Create Database' keyword. Following are the most important points which are required to learn while creating a database:

The database we want to create should be a simple and unique name, which can be easily identified.

Database name should be no more than 128 characters.

5. INT(size) or INTEGER(size) : A normal-sized integer that can be signed or unsigned. If signed, the allowable range is from -2147483648 to 2147483647. If unsigned, the allowable range is from 0 to 4294967295. You can specify a width of up to 11 digits.

DECIMAL(size, d) or DEC(size, d): It is used to specify a fixed point number. Its size parameter is specified by d parameter. The maximum value for the size is 65, and the default value is 10. The maximum value for d is 30, and the default value is 0.

6. CHAR(size): A fixed length string which can have letters, numbers, and special characters. The size parameter specifies the column length in characters which can vary from 0 to 255. Default size is 1
- VARCHAR(size): A variable length string which can contain letters, numbers, and special characters. The size parameter specifies the maximum string length in characters which can vary from 0 to 65535.
7. SQL SELECT Statement is used to fetch the data from a database table which returns this data in the form of a table. These tables are called result-sets. The basic syntax of the SELECT Query is as follows
- ```
SELECT column1, column2, columnN FROM table_name;
```
8. Save Time: Instead of searching through the endless files of paper work, a database locates information with the help of a simple query.
- Save Money: Small business groups always look for cost cutting methods without compromising on quality.
- Avoid Data Redundancy: Redundancy or Duplication of data is reduced in a database as you can arrange the data in a particular order.
- Data Security: File cabinets are not safe as they can be stolen, accidentally destroyed or lost.
- Data Integrity: Data integrity means that the data is accurate and consistent in the database. Data Integrity is very important as there are multiple databases in a DBMS.

## **Assessment - 2**

**(Based on chapters 5 and 6)**

**A Fill in the blanks**

1. Table      2. Prospector      3. RPA      4. Tuple      5. M-commerce

**B Write T for True and F for False**

1. T      2. F      3. F      4. T

**C Multiple choice questions**

1. 3D painting      2. foreign      3. Mixed Reality

**D Answer the following**

- To create a database in MySQL, we use the CREATE DATABASE command. The syntax is : CREATE DATABASE database\_name;  
In this syntax database\_name specifies the name of database.
- E-commerce is the buying and selling of goods and services, or the transmission of funds or data, over an electronic network, primarily the Internet.
- RPA is the technology used for software tools that automate human tasks, which are manual, rule-based or repetitive. Typically, it is like a bot that performs such tasks at a much higher rate than a human alone.

**General Objectives:**

- To introduce students to control structures in Python.
- To familiarize students with sequential, selection, and iterative statements.
- To enable students to understand how control structures influence the flow of program execution.

**Learning Outcomes:**

- Students can understand the concept of control structures in Python.
- Students can differentiate between sequential, selection, and iterative statements.
- Students can implement sequential statements to execute code in a specific order.
- Students can utilize selection statements such as if, elif, and else to make decisions based on conditions.
- Students can employ iterative statements like while and for loops to execute code repeatedly.
- Students can classify control structures based on their functionality.

**Methodology:**

**Aim:** To equip students with the knowledge and skills to effectively use control structures in Python programming.

**Strategy:** Start with an overview of control structures and their significance in programming. Provide examples to illustrate sequential, selection, and iterative statements. Engage students in interactive coding exercises to practice implementing control structures. Encourage collaborative learning through group discussions and peer-to-peer teaching.

**Expected Skills achieved by the learners:** Problem Solving, Computational Thinking and Creativity Skills.

**Lesson Activities:****A Fill in the blank**

1. While      2. Continue      3. [10,5]      4. if condition: Statement  
5. [3,4,5,6,7,8,9]      6. Pass      7. Break

**B Write T for True and F for False**

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

**C Match the following**

1. Range()    2. While    3. Continue    4. If-elif-else    5. Pass

**D Multiple choice questions**

1. Traversal    2. if x>n: y=x    3. Comment    4. Jump    5. for

## E Answer the following

1. Control structures that serve to specify what has to be done by our program, when and under which circumstances. Conditional structure, Iteration statement and Sequential statement are the different type of control structure in python.
2. The for loop in Python is used to iterate over a sequence (list, tuple, string) or other iterable objects. Suppose the sequence is a list [11,22,33,44,55,66], then code to iterate through the list can be written as:

```
>>> for i in [11,22,33,44,55,66]:  
    print(i)
```

In the first iteration value 11 from the list is assigned to the variable **i**, then the statement inside body of the loop is executed. This completes the first iteration of the loop. In the second iteration next value from the list, i.e 22 is assigned to the variable **i**, then again statements inside the body of the loop is executed again. The same process repeats for next values. The loop terminates when the last value, i.e 66 from the list is assigned to variable **i** and loop body is executed.

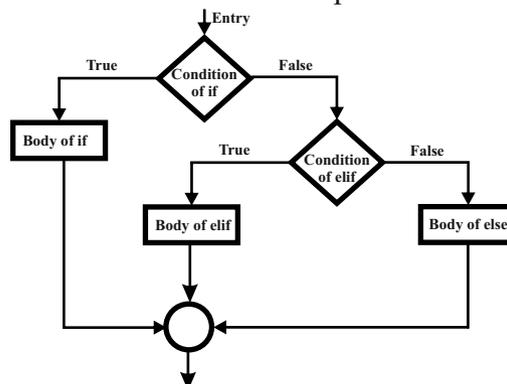
3. The general form of if statement is

if condition:

statements(s)

For example: Consider the total marks obtain by student in an examination. Here the program tests whether the total mark is less than 210, if so it print the statement 'Student Failed'. if total mark<210: print("Student Failed")

4. If the condition for if is False, it checks the condition of the next elif block and so on. If all the conditions are False, body of else is executed. Only one block among the several if...elif...else blocks are executed according to the condition. The if block can have only one else block. But it can have multiple elif blocks.



5. Continue statement is used to skip the rest of the code inside the a loop for the current iteration only. Loop does not terminate but continues on with the next iteration.

|                   |               |
|-------------------|---------------|
| for val in "str": | <b>Output</b> |
| if val == "n":    | s             |
| continue          | t             |
| print(val)        | r             |
| print("The end")  | The end       |

6. The simplest of looping structures in python is while loop statement. The while statement is used to carry out looping operation in which a group of statements are executed repeatedly until some condition has been satisfied.

While test condition:

Body of loop

Here the condition is evaluated first and if it is true, the body of the loop is executed. After the execution, the text condition is again evaluated and if it is true the body of the loop is executed once again. This process continues until the text conditions become false. On exit the program continues with the statement immediately after the body of the loop.

7. Jump statements perform an immediate local transfer of control. It transfer control unconditionally.

**General Objectives:**

- Understand the categories and domains of Artificial Intelligence.
- Recognize the capabilities and limitations of different types of Artificial Intelligence.
- Explore the potential risks and barriers associated with the adoption of Artificial Intelligence technologies.

**Learning Outcomes:**

- Students can define and differentiate between Narrow AI, General AI, and Super AI.
- Students can identify examples of Narrow AI, General AI, and Super AI in real-world applications.
- Students can explain the advantages and disadvantages of each category of Artificial Intelligence.
- Students can discuss the potential risks and barriers associated with the widespread adoption of Artificial Intelligence technologies.

## Methodology:

**Aim:** To provide students with a comprehensive understanding of the categories and domains of Artificial Intelligence and to facilitate critical thinking about the implications of AI adoption.

**Strategy:** The lesson will be delivered through a combination of lecture-style presentations, interactive discussions, and multimedia resources. Real-world examples and case studies will be used to illustrate key concepts and engage students in active learning.

**Expected Skills achieved by the learners:** Problem-solving skills, Communication skills and Critical Thinking Skills.

## Lesson Activities:

### A Fill in the blanks

1. Chess game software
2. inter connected
3. AI
4. three types
5. the computer vision
6. Semi-structured data
7. Natural Language Processing

### B Write T for True and F for False

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

### C Multiple choice questions

1. Super AI
2. Google Duplex
3. High cost
4. Computer vision

### D Write the difference between the following

General AI is perform like human.

Super AI is intelligent than human.

### E Match the following

1. Google Duplex
2. Autonomous car
3. Computer vision
4. Better than humans

### F Fill the Crossword

1. Structured
2. Autonomous
3. Data
4. Computer
5. General

### G Answer the following

1. It is goal-oriented, designed to perform a specific task it is programmed to do. A chess game software is an example of Narrow AI, meaning it can only do what it is designed to do.

2.

3. Reduction in Human Error

Takes Risk, Available 24x7

Helping in Repetitive Jobs

Faster Decisions

4. a. Acquiring Images
  - b. Processing Images
  - c. Analyzing Images
  - d. Understanding Images
5. High cost, Making humans lazy, Unemployment, No emotions and Lacking out of the box thinking.
6. Structured data, Unstructured data and Semi-structured data.

## Semester - 2

(Based on chapters 5,6,7 and 8 )

### A Fill in the blanks

1. while      2. Shakey      3.      4. Row
5. Natural Language Processing      6. [3,4,5,6,7,8,9]

### B Write T for True and F for False

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

### C Multiple choice questions

1. 5G      2. Candidate key      3. Google Duplex      4. 3D printing

### D Answer the following

1. Candidate Key: The minimal set of attributes that can uniquely identify a tuple is known as a candidate key. In the following example, the ID, Roll Number, and mail ID column has he candidate key meaning records of these columns do not have any duplicate value and it can be used to identify data of the table.  
 Primary Key: There can be more than one candidate key in relation out of which one can be chosen as the primary key. In the following example, the ID column has the primary key meaning records of the ID column do not have any duplicate value and it can be used to identify data of the table.
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4. Reduction in Human Error, Takes Risk, Available 24x7, Helping in Repetitive Jobs and Faster Decisions.
5.
  - a. Acquiring Images
  - b. Processing Images
  - c. Analyzing Images
  - d. Understanding Images
6. Blockchain refers to the system of recording information which makes it difficult or impossible to change, hack or cheat the system. This record of every transaction is updated and added to the participant's ledger.