

1. Number System

Test Your Knowledge (Page 10)

Do it yourself



Experiential Learning

(Page 11)

Do it yourself



Interdisciplinary Learning

(Page 14)

Do it yourself



Topic Flashback

(Page 15)

$$\begin{aligned}
 1. \quad 1000_2 &= 1 \times 2^3 + 0 \times 2^2 + 0 \times 2^1 + 0 \times 2^0 \\
 &= 1 \times 8 + 0 \times 4 + 0 \times 2 + 0 \times 1 \\
 &= 8
 \end{aligned}$$

$$\begin{array}{r|l}
 2 & 30 \\
 \hline
 2 & 15 \rightarrow 0 \\
 2 & 7 \rightarrow 1 \\
 2 & 3 \rightarrow 1 \\
 & 1 \rightarrow 1
 \end{array}$$

The binary equivalent of $(30)_{10}$ is 11110



QUICK QUIZ

(Page 16)

1. b 2. b 3. a

Assess Yourself



Choose the correct option.

1. d 2. a 3. a 4. c 5. a



Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✓ 2. ✓ 3. ✓ 4. ✗ 5. ✗



Answer the following questions:

- The decimal number system (base 10) is the most commonly used number system in everyday life. It uses ten digits: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. Each position in a decimal number represents a power of 10.
- In a decimal number system, each digit's value is determined by multiplying the digit itself by the weight of its position within the number, and then summing up the results. The right-most digit of the number has the lowest weight. This digit is called the Least Significant Digit (LSD).
- The hexadecimal number system (base 16) uses sixteen digits: 0-9 and A-F, where A represents 10, B represents 11, C represents 12, D represents 13, E represents 14, and F represents 15. Example: 1A3
- $1001_2 = 1 \times 2^3 + 0 \times 2^2 + 0 \times 2^1 + 1 \times 2^0$
 $= 8 + 0 + 0 + 1 = 9$
The binary number 1001 is equal to the decimal number 9.
- The flat number "F7" is in the hexadecimal number system because it uses the characters F and 7. In hexadecimal, F represents 15, and 7 is just 7. So, "F7" is a valid hexadecimal number.



Scratch Your Brain.

1. a. $(100010)_2$ b. $(42)_{10}$ c. $(111110)_2$ d. $(63)_{10}$
2. a. $(10001)_2$ b. $(10111)_2$ c. $(111110)_2$ d. $(1111)_2$
3. a. $(0101)_2$ b. $(1000)_2$ c. $(1000)_2$ d. $(1101)_2$

4. Competency-based/Application-based questions:

a. Month: The 9th month is September.

Day: The binary number "10111" is 23 in decimal.

Year: The binary number "11111100111" is 2023 in decimal.

So, your birthdate is 23rd September, 2023.

b. The binary number "1111" is 15 in decimal.

So, the discount percentage is 15%.



- c. When subtracting '1' from '0' in binary, borrow 1 from the left.
The '0' becomes '10' (binary for 2), so '10' - '1' = '1'.
The bit you borrowed from is then reduced by 1 (becomes '0' if it was '1').
- d. Boys: "10001" in binary is 17 in decimal.
Girls: "10000" in binary is 16 in decimal.
Total number of students: 17 boys + 16 girls = 33 students.

2. Advanced Features of Excel

Test Your Knowledge (Page 21)

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



Experiential Learning

(Page 23)

Do it yourself



Topic Flashback

(Page 25)

1. ✓
2. ✗
3. ✗
4. ✓



Art Integration Learning

(Page 26)

Do it yourself



QUICK QUIZ

(Page 27)

1. a
2. b
3. b

Assess Yourself



Choose the correct option.

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



Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✓
2. ✓
3. ✓
4. ✗



Answer the following questions:

1. Data sorting is the process of organising the data in ascending or descending order.
Whereas, filtering temporarily hides data that doesn't meet specified criteria, showing only the relevant information.
2. Greater Than, Less Than, Equal To, and Between are the options present under the Highlight Cell Rules command.
3. Data Bars option under the Conditional Formatting command is used to add data bars to the cells having numeric data. Hovering the mouse pointer over this option opens a sub-list that displays various types and colours of bars that you can add to the cells.
4. If the existing Conditional Formatting rules do not meet your requirements, you can also define your own rule for highlighting cells by selecting the New Rule option from the Conditional Formatting drop-down list.



Scratch Your Brain.

1.
 - a. Filter: This feature is used to display the records of female students only.
 - b. Sort: This feature is used to arrange the data in descending order of English Score.
 - c. Conditional Formatting (Highlight Cell Rules): This feature is used to highlight cells in the Grade column where the grade is 10.
2. **Competency-based/Application-based questions:**
 - a. To sort tasks by priority and then alphabetically by name, Anika can use multi-level sorting:
Step 1: Select the range of columns to be sorted.
Step 2: Click on the Sort & Filter command.
Step 3: Click on the Custom Sort option.
Step 4: Check My data has headers checkbox, if the selected columns have a heading at the top.
Step 5: Click on the Sort by box and select the column header.
Step 6: Click on the Sort On box and select Cell Values option.
Step 7: Click on the Order box and select the A to Z or Z to A option.
Step 8: Click on the Add Level button.
Step 9: Similarly, set the sorting criteria for the second column and click on the OK button.
 - b. To sort the data alphabetically by names, Ravi should follow the given steps:
Step 1: Select a column or range of data to be sorted.
Step 2: Click on the Sort & Filter button.
Step 3: Click on the Sort A to Z (for text) or Sort Smallest to Largest (for numbers) to sort the data in ascending order.





Explore in the Lab

Do it yourself

Periodic Assessment-1

(Based on chapters 1 & 2)

A. Rewrite the following incorrect statements.

1. The total number of digits used in a number system is called its base or radix.
2. Hexadecimal number system consists of 16 digits from 0–9 and letters from A to F.
3. Sorting data means to organise the data in ascending or descending order.

B. Circle the odd one out.

- | | | | |
|------------|-------|------------|--------|
| 1. Decimal | Octal | Scientific | Binary |
| 2. Int | Bit | Nibble | Byte |

C. Match the following:

- | | | | | |
|-------|-------|-------|-------|-------|
| 1. c. | 2. e. | 3. b. | 4. a. | 5. d. |
|-------|-------|-------|-------|-------|

D. Define the following:

1. In case more than one column is to be sorted in such a way that the first column is in ascending order and if some data is the same for more than one row, then the second column of such rows gets sorted in descending order.
2. Filtering process is used to separate unwanted material from a mixture. Excel also allows you to filter unwanted data from a set of data.
3. The octal number system consists of eight digits from 0 to 7. Hence, the base of octal number system is 8. In this system, the position of each digit represents a power of 8. Any digit in this system is always less than 8. Octal number system serves as a concise representation of lengthy binary numbers.

3. Layers in Krita

Test Your Knowledge (Page 33)

- | | | |
|------------------------|-----------------------|--------------------|
| 1. Line Tool | 2. SVG Text Tool | 3. Ellipse Tool |
| 4. Freehand Brush Tool | 5. Dynamic Brush Tool | 6. Multibrush Tool |





Topic Flashback

(Page 39)



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

1. a 2. b 3. b

QUICK QUIZ (Page 41)

Assess Yourself



Choose the correct option.

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




Tick (✓) the correct statements and cross (×) the wrong ones.

1. ✓ 2. × 3. × 4. × 5. ✓








Answer the following questions:

- Layers are transparent sheets containing various elements of an image which are stacked on top of each other so that the individual properties of an object are preserved. The layers help to edit an object without affecting the other objects.
- Managing layers means to create, delete, duplicate, hide, rename, and insert an object on a new layer.
- Neera should click the Add Layer  button present at the bottom left corner of the Layers docker to add a new layer in Krita.
- To unhide the hidden layer, click on the closed-eye-shape icon in the beginning of the hidden layer's name in the Layers docker. The icon will change to the open-eye-shape icon again and the content of the layer will also become visible.
- If the file has many layers, it will become difficult for the user to remember which content or effect was used in which layer. To solve this problem, Krita allows the user to rename the layers.



Scratch Your Brain.

- 





Adds a layer Duplicates a layer Deletes a layer Unhides a layer Hides a layer

2. Competency-based/Application-based questions:

a. Raman can insert an object as a new layer in Krita by following these steps:

Step 1: Click on the Layer menu.

Step 2: Place the mouse pointer over the Import/Export option.



Step 3: Click on the Import Layer option.

Step 4: Locate and select the image file to be added as a new layer.

Step 5: Click on the Open button. The image will be added as a new layer in the file.

- b. When Naina creates a poster in Krita, she should focus on the Resolution setting in the Create New Document dialog box to ensure the poster is not blurred.



Explore in the Lab

Do it yourself

4. Animations in Krita

Test Your Knowledge (Page 45)

1. Add layer 2. Duplicate layer 3. Delete Layer



Topic Flashback (Page 50)

1. b 2. c 3. a



Interdisciplinary Learning (Page 50)

Do it yourself



QUICK QUIZ (Page 51)

1. b 2. b 3. b

Assess Yourself



Choose the correct option.

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



Fill in the blanks with the correct words.

1. Animation 2. stage 3. timeline 4. play





Answer the following questions:

1. Timeline is present below the stage. It is a rectangle-shaped section that is used to control and manage the animations.
2. The animation takes place in several incremental stages, where an object is moved in small steps, one at a time. Each of these steps is represented as a frame in the timeline. When these frames are rapidly played in succession, they create the illusion of the object moving from one position to another on the stage. These frames are indicated as numbers on the timeline whereas, keyframes are special frames where some changes are defined in the properties of an object. These changes can be modifications in size, shape, colour, position, etc.
3. To duplicate a frame in Krita, follow these steps:
Step 1: Select the frame you want to duplicate in the timeline.
Step 2: Right-click on the frame and select Create Duplicate Frame.
4. Rohan should click the Add Blank Frame button in the Timeline to add a new frame in Krita.



Scratch Your Brain.

1. a. Play
b. Animation settings menu
c. Choose workspace
d. Add duplicate frame
2. **Competency-based/Application-based questions:**
 - a. Raavi notices a rectangular section below the stage, which is called the Timeline in Krita.
 - b. The animation takes place in several incremental stages, where an object is moved in small steps, one at a time. Each of these steps is represented as a frame in the timeline. When these frames are rapidly played in succession, they create the illusion of the object moving from one position to another on the stage. These frames are indicated as numbers on the timeline.
 - c. Anita can follow these steps to switch the workspace to Animation Mode in Krita:
Step 1: Click on the Choose workspace icon on the top right side of the Toolbar.
Step 2: Click on the Animation option from the list.
Step 3: The necessary animation related components like Timeline will be added to the Krita screen.



Explore in the Lab

Do it yourself



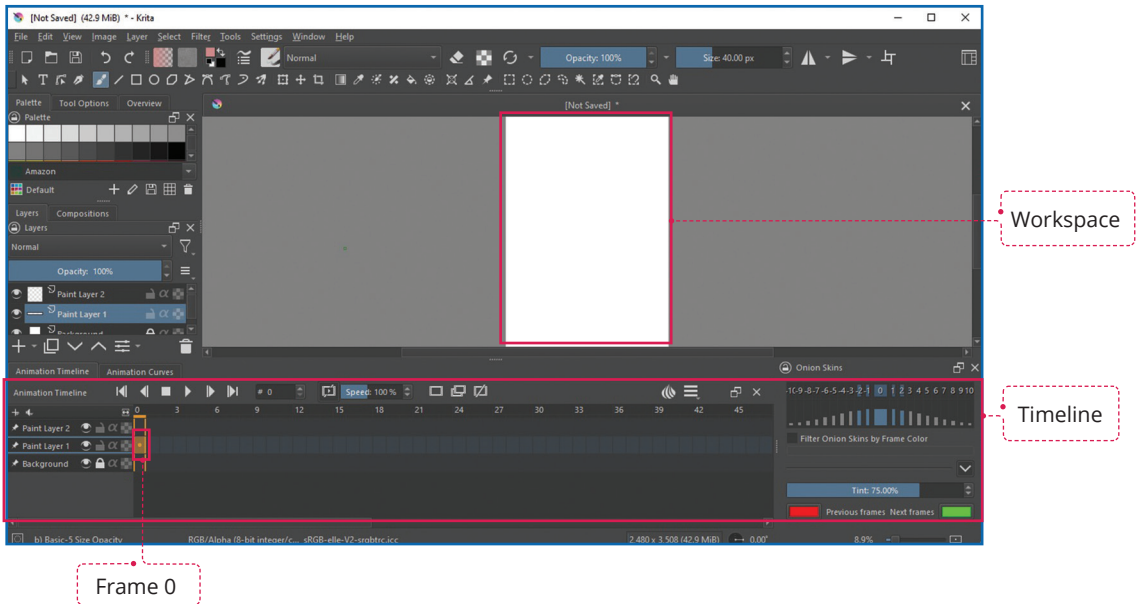
SmartGPT (4.0)-VII (Answer Key)



Periodic Assessment-2

(Based on chapters 3 & 4)

A. Write the names of components of the Layers Docker in Krita.



B. Define the following:

1. Animation is a method by which images are manipulated in a manner so that they appear as moving objects.
2. In Animation mode, the workspace is called the stage. This is where you place objects that you want to animate.
3. Keyframes are special frames where some changes are defined in the properties of an object. These changes can be modifications in size, shape, colour, position, etc.

C. Answer the following questions:

1. Dimensions: This tab contains the options related to the image. The common options under this tab are:

Width and Height: Used to specify the width and height of the new file in pixels, centimeters, inches, millimeters, points and picas.

Resolution: Used to specify the number of pixels per inch. More resolution, makes the image clear while low resolution makes the image blur.

Color Model: Used to specify the number of colours that can appear in the image. You can choose RGB, Grayscale, CMYK and Lab color modes.

Content: This tab contains the file-related options. The common options under this tab are:

Name: Used to specify the new name for the Krita file. By default, the name given to the file is 'Unnamed'.



Layers: Used to specify the number of layers in the file. The layers can be added or deleted while working on the file also.

Background Color: Used to specify the initial background colour of the new file.

Background Opacity: Used to specify the intensity of the background colour.

2. The steps to add an object as a new layer in Krita:

Step 1: Click on the Layer menu.

Step 2: Place the mouse pointer over the Import/Export option.

Step 3: Click on the Import Layer option.

Step 4: Locate and select the image file to be added as a new layer.

Step 5: Click on the Open button.

Test Sheet–1

(Based on chapters 1 to 4)

A. Choose the correct option.

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

B. Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✗ 2. ✓ 3. ✓ 4. ✗ 5. ✗ 6. ✗
7. ✓ 8. ✓

C. Answer the following questions.

1. The hexadecimal number system (base 16) uses sixteen digits: 0-9 and A-F, where A represents 10, B represents 11, C represents 12, D represents 13, E represents 14, and F represents 15. Example: 1A3.
2. The flat number F7 is in the hexadecimal number system because it uses the characters F and 7. In hexadecimal, F represents 15, and 7 is just 7. So, F7 is a valid hexadecimal number.
3. The Data Bars option in Excel's Conditional Formatting visually represents cell values with bars, making it easy to compare numeric data at a glance.
4. Data sorting is the process of organising the data in ascending or descending order.
Filtering temporarily hides data that doesn't meet specified criteria, showing only the relevant information.
5. Managing layers means to create, delete, duplicate, hide, rename, and insert an object on a new layer.
6. If the file has many layers, it will become difficult for the user to remember which content or effect was used in which layer. To solve this problem, Krita allows the user to rename the layers.
7. Timeline is present below the stage. It is a rectangle-shaped section that is used to control and manage the animations.



8. To duplicate a frame in Krita, follow these steps:

Step 1: Select the frame you want to duplicate in the timeline.

Step 2: Right-click on the frame and select Create Duplicate Frame.

5. Google Apps

Test Your Knowledge (Page 59)

1. Facebook (United States)
2. WhatsApp (United States)
3. X (formerly twitter) (United States)
4. Instagram (United States)

Topic Flashback (Page 70)

Yes, there are several differences between Google Slides and PowerPoint. One difference is that Google Slides is a web-based application that is fully integrated with Google Drive, whereas PowerPoint is a desktop application that is part of the Microsoft Office suite.

QUICK QUIZ (Page 73)

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

Assess Yourself

Choose the correct option.

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

Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✓
2. ✓
3. ✗
4. ✓
5. ✓

Fill in the blanks with the correct words.

1. web
2. Drive
3. YouTube
4. Satellite
5. Maps

Answer the following questions:

1. Gmail, also known as Google Mail, is one of the most widely used and highly regarded email services available on the internet.

2. Two features of Google Maps are:
 - Google Maps provides step-by-step directions from your starting point to your destination.
 - You can also search for essential services nearby.
3. Rishi should click on the Shared with me option in Google Drive to view and manage the photos and videos shared by his friend.
4. Perform the following steps to create a Google Sheet:

Step 1: Click on the Google apps button.

Step 2: Click on the Sheets icon.

Step 3: Click on the Blank spreadsheet template.
5. Google gives you 15 GB of free cloud storage when you sign up for the first time. If needed, you can upgrade it to more space by paying some amount.



Scratch Your Brain.

1. v. b. iv. c. i. d. vi. e. ii. f. iii.
2. **Competency-based/Application-based questions:**
 - a. Hiral should use Google Slides because she can give presentations online, she can also edit the presentation through her smartphone with the help of the Google Slides app.
 - b. Two essential features of YouTube that can help her are:
 - Users can like/comment/share YouTube videos.
 - Users can subscribe/follow YouTube channels and users.
 - c. She should use Google Maps.
 - d. The Grid layout shows files as thumbnails (larger view). This will change the file display from a list to a thumbnail view, making photos appear larger and easier to organise.



Explore in the Lab

Do it yourself

6. App Development

Test Your Knowledge (Page 78)

1. Camera
2. Gallery
3. Clock
4. Calculator
5. Messages





Topic Flashback

(Page 80)

Instagram

Camera



Topic Flashback

(Page 90)

The Project Designer window in App Inventor is the primary interface where you can design the user interface (UI) of your app and set up its components.

Assess Yourself



Choose the correct option.

1. d

2. c

3. d

4. b

5. a



Fill in the blanks with the correct words.

1. application

2. Native

3. Gaming

4. Educational

5. social networking



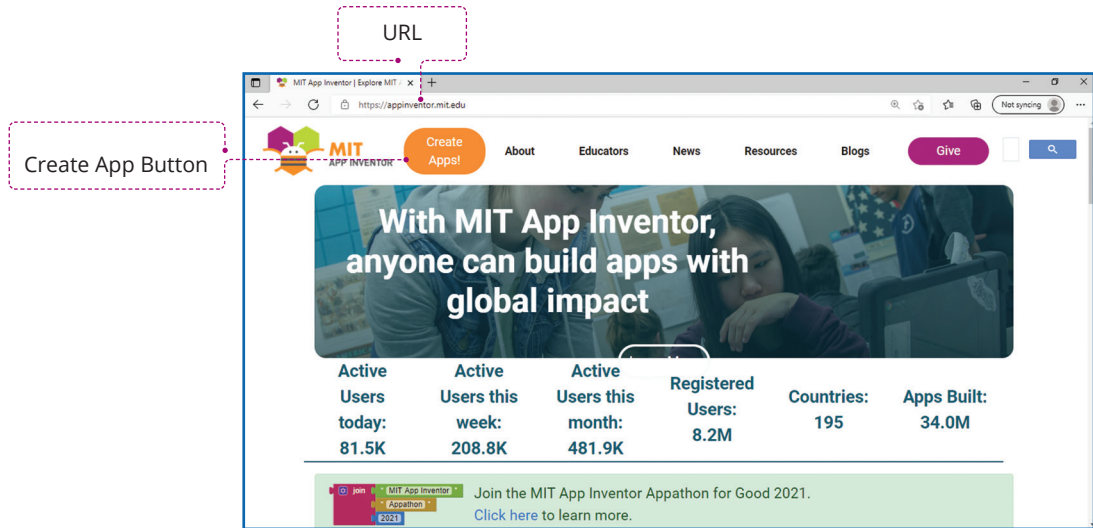
Answer the following questions:

1. A hybrid app is an app that combines the features of a native app and a web app. Just like a native app, developers develop a hybrid app for a specific platform and then deploy it on the app store. Examples of the hybrid apps are Instagram and Gmail.
2. App Inventor is a free app development tool provided by Massachusetts Institute of Technology (MIT). With the help of App Inventor, we can create apps for smart phones.
3. Block Editor is the place where we code the components added in the Project Designer window and instruct them the actions to be performed by them.
4. Sonal can find pre-defined blocks to handle Math operations in the Math drawer in App Inventor.
5. Following points should be kept in mind while developing an app:
 - The idea of developing an app should be unique.
 - The app we are going to develop should contain all the relevant features.
 - The app should be user friendly.



Scratch Your Brain.

1.



URL

Create App Button

MIT App Inventor

Create Apps!

About Educators News Resources Blogs Give

With MIT App Inventor, anyone can build apps with global impact

Active Users today:	Active Users this week:	Active Users this month:	Registered Users:	Countries:	Apps Built:
81.5K	208.8K	481.9K	8.2M	195	34.0M

Join the MIT App Inventor Appathon for Good 2021. [Click here to learn more.](#)

2. **Competency-based/Application-based questions:**

a. To rename a button, follow the given steps:

Step 1: Click on the button, whose name you want to change, in the Components pane.

Step 2: Click on the Rename button.

Step 3: Type the new name for the component.

Step 4: Click on the OK button.

b. Geetanjali can use the MIT App Inventor Emulator to test the app without an Android device.

c. ii. Education

d. Different panes of MIT App Inventor are: Palette Pane, Viewer Pane, Components Pane, Properties Pane.



Explore in the Lab

Do it yourself



7. More on HTML5

Test Your Knowledge (Page 96)

1. What You See Is What You Get
2. Hyperlink
3. HTML5



Topic Flashback (Page 101)

Text-align property is used to align the text. Its different values are: left, right, center, justify.



Interdisciplinary Learning (Page 102)

Do it yourself



QUICK QUIZ (Page 105)

1. b
2. b
3. a

Assess Yourself



Choose the correct option.

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



Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✓
2. ✗
3. ✗
4. ✓
5. ✓



Fill in the blanks with the correct words.

1. <P>
2. horizontal
3. <sub>
4. color
5. background-image



Answer the following questions:

1. <H3>This is a Third-Level Heading</H3>
2. font-family, text-align, color
3. background-repeat property specifies the repetition of an image on the web page.
4. • font-family: Name of the font
• font-size Value is given in pixels. The default font size for the text is 16 px.

- To underline text on a web page, Ravi should use the text-decoration property in CSS with the value underline.

text-decoration: underline;



Scratch Your Brain.

- Do it yourself
- Do it yourself
- Competency-based/Application-based questions:**
 - To achieve this task, Himani can use several font properties in CSS to style each book title with different fonts and colors. Here are the key properties she should use: font-family, color, font-size.
 - background-image: url('your-photo.jpg');
 - To separate the sections (event descriptions, schedules, and location details) with lines, Riya can use the <hr> tag in HTML.



Explore in the Lab

Do it yourself

8. Lists and Tables in HTML5

Test Your Knowledge (Page 110)

```
<BODY>
```

```
The chemical formula of <B>Sulfuric Acid</B> is H<SUB>2</SUB>SO<SUB>4</SUB>.<BR>
```

```
The formula of <B>Pythagoras theorem</B> is a <SUP>2</SUP> + b<SUP>2</SUP> = c<SUP>2</SUP>.<BR>
```

Where a, b and c are three sides of a right triangle.

```
</BODY>
```



Topic Flashback (Page 114)

```
<HTML>
```

```
<HEAD> <TITLE>Nesting of Lists</TITLE> </HEAD>
```

```
<BODY>
```

```
<OL TYPE="I">
```



```

<LI>Office
  <UL TYPE="disc">
    <LI>Word</LI>
    <LI>Excel</LI>
    <LI>PowerPoint</LI>
  </UL>
</LI>
<LI>Adobe Software
  <UL TYPE="disc">
    <LI>Animate CC</LI>
    <LI>Photoshop CC</LI>
  </UL>
</LI>
</OL>
</BODY>
</HTML>

```



Topic Flashback

(Page 121)

1. Border Property
2. Border-style Property
3. Border-color Property
4. Border-spacing Property



QUICK QUIZ

(Page 121)

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

Assess Yourself



Choose the correct option.

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



Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✓
2. ✗
3. ✗
4. ✗
5. ✓



Fill in the blanks with the correct words.

1. START, TYPE
2. disc
3. <TH>
4. border-style
5. Table Data



Answer the following questions:

1. The tag is used to define an unordered list.

```
2. <OL TYPE="a">
    <LI>Item 1</LI>
    <LI>Item 2</LI>
    <LI>Item 3</LI>
</OL>
```

3. The border-spacing property is used to specify the space between the borders of adjacent cells. For example:

```
<style>
table
{
    border-spacing: 10px;
}
</style>
```

```
4. <style>
table, th, td
{
    border:3px;
    border-color:solid red;
    border-spacing:10px;
padding:15px;
}
</style>
```

5. The ROWSPAN attribute applies when a cell is extended for more than one row, that is, the cell spans for 2 or more rows instead of 1 as shown in below table.

Example for using ROWSPAN attribute is:

```
<TD ROWSPAN="3">
```



Scratch Your Brain.

1. a. b. <DL> c. <TR> d. Table width e. Padding
2. **Competency-based/Application-based questions:**
 - a. He can Create table using <TABLE> tag.
 - b. She can use tag.
 - C. He can use Background-color Property.





Explore in the Lab

Do it yourself

Periodic Assessment-3

(Based on chapters 5 & 8)

A. Spot the errors in the following HTML code and rewrite the correct code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Errors</title>
</head>
<body>
  <h1>This is a heading</h1>
  <p>This is a paragraph.</p>
  <ul>
    <li>Item 1</li>
    <li>Item 2</li>
    <li>Item 3</li>
  </ul>

  <table>
    <tr>
      <th>Name</th>
      <th>Age</th>
    </tr>
    <tr>
      <td>John</td>
      <td>25</td>
    </tr>
  </table>
</body>
</html>
```

B. Give an example of the following:

1. Google Assistant
2. Camera
3. YouTube
4. Vedantu
5. Candy Crush Saga



C. Write the uses of the following:

1. The Rowspan attribute applies when a single cell is extended for more than a single row, that is, the cell spans for 2 or more rows instead of 1.
2. The font-family specifies the font to be used.
3. The background-image specifies the image to be used in the background on the web page.
4. Google Drive is a cloud-based storage service. The synchronisation feature allows you to download and upload files into the remote server.
5. The border-spacing property is used to specify the space between the borders of adjacent cells.

9. Algorithmic Intelligence

Test Your Knowledge (Page 133)

- | | | | |
|---------|------|------|------|
| 1. AA2 | BB4 | CC3 | DD8 |
| 2. AB | DF | GH | JK |
| 3. 1234 | 6789 | 2354 | 4567 |
| 4. 0001 | 1002 | 0101 | 0111 |



Interdisciplinary Learning (Page 134-135)

Do it yourself



Experiential Learning (Page 136)

Do it yourself



Topic Flashback (Page 136)

Do it yourself



QUICK QUIZ (Page 136)

1. b
2. a
3. b



Assess Yourself



Choose the correct option.

1. c 2. a. 3. b



Tick (✓) the correct statements and cross (✗) the wrong ones.

1. ✗ 2. ✗ 3. ✓ 4. ✗ 5. ✓



Answer the following questions:

1. Information processing involves acquiring, storing, analyzing, retrieving and displaying data.
2. An algorithm is a step-by-step instructions in a sequential manner to solve a problem.
3. Binary code is the most basic form of data that a computer can directly interpret. Computers use binary code, composed of 1s and 0s, to store and process data.
4. The program executes the statements written inside the IF block when the condition is true. If the condition is false, the statements written inside the ELSE block will be executed.

5. **Read Day**

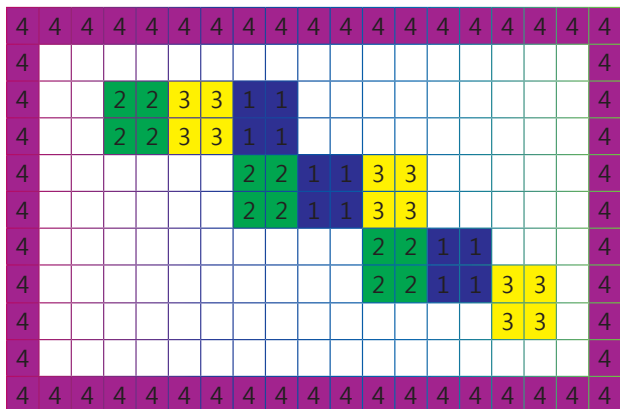
```
IF Day = "Sunday" THEN
    PRINT "Picnic"
ELSE
    PRINT "School"
```



Scratch Your Brain.

1.

- If (number is 1) then colour Blue
- If (number is 2) then colour Green
- If (number is 3) then colour Yellow
- If (number is 4) then colour Purple



2. **IF**
 Number is divisible by 3
 THEN
 Print "Yes"
 ELSE
 Print "No"
3. **Competency-based/Application-based questions:**
 - a. **IF**
 World without electricity
 THEN
 Life will be impossible
 - b. **IF**
 My friend has changed into a cartoon character
 THEN
 I will be glad to see him & will play with him



Explore in the Lab

Do it yourself

10. Conditional Statements in Python

Test Your Knowledge (Page 141)

1. True
2. 84
3. 8 2 20
4. True
5. 22



Topic Flashback (Page 144)

```
age = 17
if (age > 18):
    print('You are eligible to vote')
else:
    print('Not eligible to vote')
```



Interdisciplinary Learning (Page 146)

Do it yourself



22 SmartGPT (4.0)-VII (Answer Key)





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

Assess Yourself



Choose the correct option.

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



Fill in the blanks with the correct words.

1. True 2. False 3. top-down 4. elif



Answer the following questions:

- x is less than or equal to 10.
- Abhi's code has a syntax error in the if and elif conditions.

Corrected Code:

```
number = int(input("Enter a number: "))
if (number % 4 == 0 and number % 5 == 0):
    print(number, "is divisible by both 4 and 5.")
elif (number % 4 == 0):
    print(number, "is divisible by 4 but not by 5.")
elif (number % 5 == 0):
    print(number, "is divisible by 5 but not by 4.")
else:
    print(number, "is neither divisible by 4 nor by 5.")
```

- The syntax of the if...else statement is given below:
if (Test Expression):
 Indented block
else:
 Indented block
- If Meenakshi's conditional expression always returns True, then the if block will always execute, and the else block will never run.



Scratch Your Brain.

- a. Zero



- b. The product is: 40
 - c. Above ten
and also above 20!
2. a. `x = 10`
`if (x > 5):`
`print("x is greater than 5")`
- b. `y = 8`
`if (y > 5):`
`print("y is greater than 5")`
 - c. `x = 10`
`if (x == 5):`
`print("x is equal to 5")`
3. **Competency-based/Application-based questions:**
- a. To develop a Python program that checks the strength of the password entered by the user, Ajit can use an if-elif-else conditional statement.
 - b. Here's the Python program to help her:
`age = int(input("Enter the age of the member: "))`
`if age < 18:`
`fee = 500`
`else:`
`fee = 700`
 - c. The type of statement she should use is an if-elif-else statement, as she needs to check multiple age ranges and assign the appropriate grade level.
 - d. To do this, we need to check if the first letter is one of the vowels (a, e, i, o, u).
`if first_letter in ('a', 'e', 'i', 'o', 'u):`
`print("The first letter is a vowel.")`
`else:`
`print("The first letter is a consonant.")`



Explore in the Lab

Do it yourself



11. Concept of Smart Living

Test Your Knowledge (Page 155)

Do it yourself.



Topic Flashback (Page 156)

1. T
2. F



Interdisciplinary Learning (Page 158)

Do it yourself



QUICK QUIZ (Page 158)

1. b
2. b
3. b

Assess Yourself



Choose the correct option.

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



Fill in the blanks with the correct words.

1. Video Doorbells
2. Smart Cameras
3. Smart Home
4. Smart TV



Answer the following questions:

1. Smart Homes are homes that use Internet connected devices to empower remote monitoring and management of appliances and devices such as for lighting and heating.
2. Smart lights help in saving and conserving energy. It can be programmed to turn on/off, control the brightness, and store your preferences.
3. Smart speakers can accept voice commands and can be controlled through smart phones. They can also perform activities like creating a playlist, turning on reminders, searching for information on the Internet, etc.
4. Smart Homes are great at saving power. For example, people often forget to switch off their lights when they go to sleep. Smart Homes can detect when the user is asleep and accordingly switch off the lights.





Scratch Your Brain.

1.



Smart speakers



Smart light



Smart smoke detectors



Video doorbells

2. Competency-based/Application-based questions:

a. Smart camera

b. Smart home

c. Smart lights



Explore in the Lab

Do it yourself

Periodic Assessment-4

(Based on chapters 9 to 11)

A. Write the output of the following Python program:

Congratulations!

You are eligible to vote.

B. Write the syntax for if...elif...else statement.

```
if (Test Expressions_1):
```

```
    Indented block 1
```

```
elif (Test Expression_2):
```

```
    Indented block 2
```

```
elif (Test Expression_3):
```

```
    Indented block 3
```

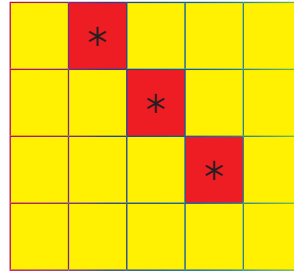
```
else:
```

```
    Indented block
```



C. Cross out the boxes as per the program.

If (box has *)
then
colour it red
else
colour it yellow



D. Answer the following questions:

- a. Smart Smoke Detectors
- b. Smart Lights

Test Sheet–2

(Based on chapters 5 to 11)

A. Choose the correct option.

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

B. Fill in the blanks:

- 1. Drive 2. Gaming 3. <p> 4. <th> 5. border-style
- 6. false 7. sequential 8. CCTV camera

C. Tick (✓) the correct statements and cross (×) the wrong ones.

- 1. ✓ 2. ✓ 3. × 4. × 5. × 6. ×
- 7. ✓ 8. ×

C. Answer the following questions:

- 1. Two features of Google Maps are:
 - a. Google Maps provides step-by-step directions from your starting point to your destination.
 - b. You can also search for essential services nearby.
- 2. App Inventor is a free app development tool provided by Massachusetts Institute of Technology (MIT). With the help of App Inventor, we can create apps for smart phones.
- 3. Sonal can find pre-defined blocks to handle Math operations in the Math drawer in App Inventor.
- 4. Background-repeat property specifies the repetition of an image on the web page.
- 5. The border-spacing property is used to specify the space between the borders of adjacent cells. For example:

```
<style>  
table
```



```
{  
    border-spacing: 10px;  
}  
</style>
```

6. Binary code is the most basic form of data that a computer can directly interpret. Computers use binary code, composed of 1s and 0s, to store and process data.
7. The syntax of the if...else statement is given below:

Syntax:

```
if (Test Expression):  
    Indented block  
else:  
    Indented block
```

8. Smart lights help in saving and conserving energy. It can be programmed to turn on/off, control the brightness, and store your preferences.

