

Answer Key



Touchpad Plus (3.2)

1. Number System

Checkpoint)



- **A.** 1. b 2 a 3 d 4 a 5 b
- **B.** 1. T 2. F 3. T 4. T 5. T
- **C.** 1. 0 2. Decimal number 3. 10 4. 8 5. Binary
- **D** 1. An Octal number system is a number system which has digits from 0 to 7.
 - 2. There are 16 bits in one word.
 - 3. Base is the total number of digits used in any number system.
- **E.** 1. A number system is method of counting. We have Decimal number system in mathematics where 10 digits are used (0 to 9). Using these 10 digits we create all numbers. In computers we work in binary number system where only 2 digits 0 and 1 are used.
 - 2. To convert a decimal number into a binary number, follow these steps:
 - Step 1 Divide the decimal number by 2.
 - Step 2 Note down the quotient and the remainder.
 - Step 3 Divide the quotient obtained again by 2 and note down the resulting quotient and remainder.
 - Step 4 Repeat the procedure till you reach a quotient less than 2.
 - Step 5 List the last quotient and all the remainders (moving from bottom to top).
 - 3. In binary subtraction, binary number of lower value is subtracted from the binary number of higher value. If Y is greater than X, then 1 is borrowed from the next position. When the binary digit 0 borrows 1 from the next most significant digit, it becomes 10.

Mind Boggler

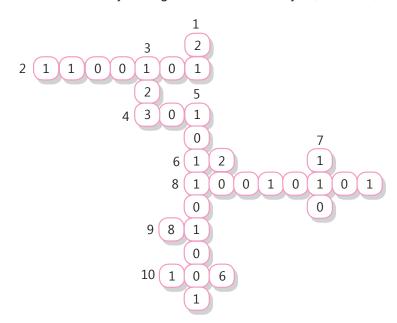


A. 1. (256)₈ belongs to the octal (base 8) number system, and (2AF)₁₆ belongs to the hexadecimal (base 16) number system, as indicated by their respective subscripts. Prashant can tell because the subscript denotes the base of each number system.



2. Yash and Eklavya's height difference in binary is (10011011)₂.

В.



2. Formulas, Functions and Charts in Calc





- **A.** 1. b 2. a 3. b 4. b 5. a 6. a
- **B.** 1. functions 2. equal 3 square root 4 column 5 dollar (\$)
- **C.** 1. T 2. T 3. F 4. F 5. F
- **D.** 1. b 2. c 3. c 4. a
- **E.** 1. A cell reference refers to the address of a cell that is used in formulas to fetch data from another cell.
 - 2. The Category Axis, also known as the X-axis, is the horizontal axis in a chart.
 - 3. Legend is a key which shows the meanings of symbols and colours used in the chart.
 - 4. LEN function returns the length of the text string.
- **F.** 1. A formula in LibreOffice Calc is an expression used to perform calculations on values in a spreadsheet.

For example:

- Simple arithmetic: =2+2
- Cell References: =A1+B1



- 2. Calc follows certain rules of precedence:
 - Calc calculates expressions within parentheses '(', ')' first.
 - Calc calculates exponent '^' before multiplication, division, addition and subtraction.
 - Calc calculates multiplication and division before addition and subtraction.
 - Calc calculates consecutive operators with the same level of precedence from left to right.
- 3. CONCATENATE function joins together two or more different text strings.

For example:

Input: =CONCATENATE ("Libre","Office")

Output: LibreOffice

- 4. The rules for using functions are:
 - All Calc functions must begin with = sign
 - Function name must be a valid Calc name.
 - Function must be followed by opening and closing parenthesis.
 - Functions must contain an argument within it.
- 5. **Column Chart:** It is usually used to display the data in the form of vertical bars. It is used to show the changes in data over a period of time or comparison among the different data items. The categories are represented on the horizontal axis and the values are represented on the vertical axis.

Bar Chart: The bar chart displays the data in the form of long rectangular rods also called bars. These bars can be placed horizontally on the chart area. It illustrates the comparisons amongst the individual items. In this chart, categories are represented on the vertical axis and values are represented on the horizontal axis.

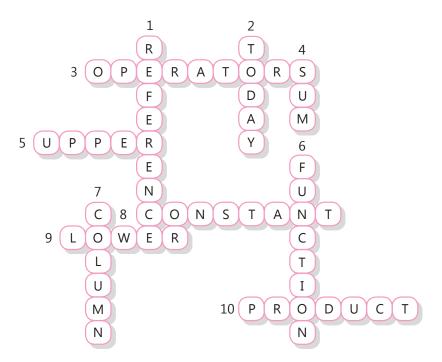




- **A.** 1. Suman should use a Pie Chart. It is a circular chart divided into sectors where each sector shows the relative size of each value. It always shows only one data series and is useful when you want to emphasise a significant element.
 - 2. Ankita should use Cell Referencing so that the marksheet updates automatically when she changes the marks in any subject.



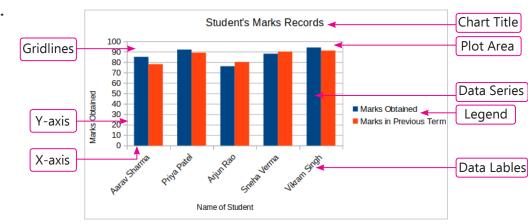
В.



Periodic Assessment-1

(Based on chapters 1 & 2)

A.



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

- **C.** 1.80
 - 2. COMPUTER
 - 3.8
 - 4.4



3. More on Calc

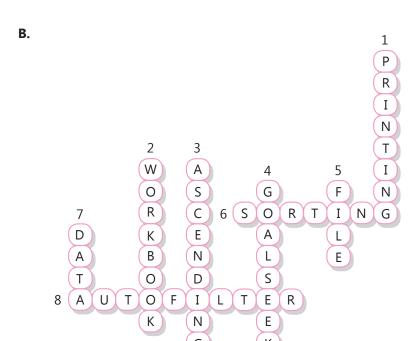
Checkpoint Checkpoint

- **A.** 1. b 2. b 3. c 4. a
- **B.** 1. F 2. T 3. T 4. F
- **C.** 1. Conditional 2. Standard Filter 3. Ctrl + P
 - 4. Conditional Formatting
- **D.** 1. The Goal Seek feature helps find the required input value for a formula to produce a specified result, automatically recalculating and adjusting the dependent variable.
 - 2. Sorting is the process of arranging selected data in ascending or descending order.
 - 3. When you apply a filter in Calc and uncheck some checkboxes, the rows corresponding to the unchecked data are hidden from view, but the data is not deleted.
- **E.** 1. To apply Multiple Sort, follow these steps:
 - Step 1: Select the range of columns to be sorted.
 - Step 2: Select the Sort option from Data menu. The Sort dialog box will open.
 - Step 3: Check the Range contains column labels checkbox if your data includes column labels, so the header row is not included in the sort.
 - Step 4: In the Sort Key 1 section, click on the Column drop-down list to view the list of column headers under the Sort Criteria tab. Select a column header.
 - Step 5: Click on the Ascending radio button for Sort Key 1.
 - Step 6: Repeat steps 4 and 5 to add additional sort criteria.
 - Step 7: Click on the OK button. The data will be sorted according to the criteria defined.
 - 2. Sorting is arranging the data in ascending or descending order. But Filtering data is used when we want to show only required information to user.

Mind Boggler



- **A.** 1. Aarav can use the Conditional Formatting feature to highlight all scores above 75 in bold text.
 - 2. Priya can use the Goal Seek feature to find out how much money needs to be invested to reach her savings goal.



4. Using Tools in Tupi 2D



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

- **B.** 1. Pencil
- 2. Paint Bucket
- 3. Node selection
- 4. Brush properties

- 5. Ink
- **C.** 1. Cap option is used to choose line patterns.
 - 2. The Paint Bucket tool is used to fill closed shapes or objects with a solid colour. It helps in quickly coloring areas within an object without manually painting.
 - 3. + button is used to add the objects in the library.
- **D.** 1. Object Selection tool helps the user to modify, flip or group objects as per their requirements. On the other hand, Node Selection helps to reorder the nodes which were created while drawing an object.
 - 2. Polyline tool helps to draw different shapes and diagrams in the workspace area. This tool helps to draw closed figures and inter-connected lines. On the other hand, Line tool is used to draw straight-line.



Mind Boggler



- **A.** 1. Ritu can use the Polyline tool to draw a curved line in Tupi 2D.
 - 2. Sangeeta can use the Shapes tool to draw a circle.
 - 3. Ajay can use the Object Selection tool to select a portion of the object drawn.

В.

A	С	P	U	N	D	I	L
F	S	E	0	M	G	K	Р
I	D	N	B	R	U	S	H
L	V	С	T	F	J	Y	T
	В	I	Y	В	K	V	L
С	N		H	С	N	В	J
P	0		Y	L	I	N	E
A	D	T	H	J	K	R	T

5. Animations in Tupi 2D





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

- **B.** 1. F
- 2. F
- 3. T
- 4. T
- **C.** 1. Tweening is a feature that helps us to make animation process easier and faster.
 - 2. Layer is a transparent sheet that is used to work on the individual part of the image without affecting the other parts.
 - 3. Coloring Tween is used to create a gradual change in the color of an object between keyframes, creating a smooth color transition.
- **D.** 1. To insert a new frame, follow these steps:
 - Step 1: Click on the Exposure Sheet in the right sidebar.
 - Step 2: Click on Insert frame button.

A new frame will be inserted.

- 2. To create Motion Tween, follow the given steps:
 - Step 1: Draw any object on the workspace area.
 - Step 2: Click on Tweening option from the Toolbox.
 - Step 3: Choose Motion Tween option.

- Step 4: Type a name for the tween and click on + button.
- Step 5: Left-click and hold the mouse button, then drag the cursor over the object you want to select. Release the mouse button after selecting the object. Dotted lines around the object will appear.
- Step 6: Click on Set Path Properties radio button.
- Step 7: Click at different points to set the path for the animation. As you click, Tupi will automatically create path for you.
- Step 8: Click on Save Tween button to save the animation.
- Step 9: Click on Player tab to play the animation in the player window.
- 3. Rotation Tween is useful when we need to rotate an object clockwise and anti-clockwise.
- 4. If we have to move an object clockwise and anti-clockwise then Rotation tween is useful. If you have imported an image of a cartoon in the workspace area from library and you want to rotate the cartoon to anti-clockwise. The Rotation tween automatically rotates the object as per the specification given.



- 1. Shweta can rename a layer by double-clicking on it, typing a new name, and pressing the Enter key.
- 2. Motion Tween is the most suitable for this purpose.

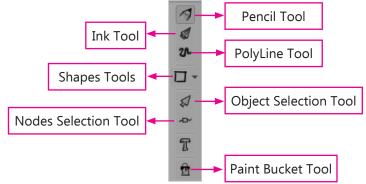
Periodic Assessment-2

(Based on chapters 3 to 5)

- **A.** 1. Sort Ascending
- 2. AutoFilter
- 3. Sort Descending
- 4. Sort

- **B.** 1. Opacity Tween helps control the opacity of an object at two points.
 - 2. A frame is a single animation that is applied on an object or picture on a timeline.
 - 3. Shear Tween changes the object's horizontal and vertical shear.
 - 4. Polyline tool helps to draw different shapes and diagrams in the workspace area.

C.





Touchpad Plus (Ver. 3.2)-VII (Answer Key)

Test Sheet-1

(Based on chapters 1 to 5)

Section A

A.	1. (i)	2. (iii)	3. (ii)	4. (ii)	5. (iii)			
	6. (i)	7. (iii)	8. (iii)					
В.	1. F	2. T	3. T	4. F	5. T	6. F		
C.	1. 8	2. equal	3. Ctrl + P	4. Paint Buck	et			
	5. Pencil	6. Brush Properties						

Section B

- **A.** 1. There are 16 bits in one word.
 - 2. A cell reference refers to the address of a cell that is used in formulas to fetch data from another cell.
 - 3. The Goal Seek feature helps find the required input value for a formula to produce a specified result, automatically recalculating and adjusting the dependent variable.
 - 4. The Paint Bucket tool is used to fill closed shapes or objects with a solid colour. It helps in quickly coloring areas within an object without manually painting.
 - 5. Layer is a transparent sheet that is used to work on the individual part of the image without affecting the other parts.
 - 6. Tweening is a feature that helps us to make animation process easier and faster.
- **B.** 1. To convert a decimal number into a binary number, follow these steps:
 - Step 1: Divide the decimal number by 2.
 - Step 2: Note down the quotient and the remainder.
 - Step 3: Divide the quotient obtained again by 2 and note down the resulting quotient and remainder.
 - Step 4: Repeat the procedure till you reach a quotient less than 2.
 - Step 5: List the last quotient and all the remainders (moving from bottom to top).
 - 2. A formula in LibreOffice Calc is an expression used to perform calculations on values in a spreadsheet.

For example:

- Simple arithmetic: =2+2Cell References: =A1+B1
- 3. Sorting is arranging the data in ascending or descending order. But Filtering data is used when we want to show only required information to user.
- 4. Object Selection tool helps the user to modify, flip or group objects as per their requirements. On the other hand, Node Selection helps to reorder the nodes which were created while drawing an object.
- 5. Rotation Tween is useful when we need to rotate an object clockwise and anti-clockwise.



6. Introduction to GIMP

Checkpoint

4. Text

- 1. d 2. b 3. b Α. 4. a
- 2. T 3. T 4. T 5. T 1. F B.

on the basis of colour codes and do the selection quickly.

- 3. Free Select 2. workspace 5. gradient 1 Fuzzy Select tool, or Magic Wand tool, is used to detect the edges of the image automatically D.
 - 2. Free Select tool, or Lasso tool, is used to select an object or a section of an image by drawing a freehand border around it.
 - 3. Zoom tool is used to magnify an image.
- 1. GIMP is a is a free and open-source graphics editor software used for image retouching and E. editing, free-form drawing, cropping, converting between different image formats and more. It has the following features:
 - A User-friendly interface.
 - Quick image manipulation capabilities.
 - Powerful tools are used to change the color of an image by adjusting brightness, contrast, color balance, hue and saturation levels.
 - The ability to create graphics for web applications with reduced file size, thus helping to load websites faster.
 - 2. The Paintbrush tool is used to draw brush strokes, giving an effect of painting.

The steps to use the Paintbrush tool are:

- Step 1: Open an image in GIMP.
- Step 2: Select the Paintbrush Tool from the Toolbox.
- Step 3: Click on the active Foreground Color in the Toolbox to change the brush colour.
- Step 4: In the Change Foreground Color dialog box, select the desired colour for the Paintbrush and click OK to confirm.
- Step 5: Adjust the opacity and size of the brush in the Tool Options panel.
- Step 6: Select the type of brush from the Brushes tab to customise the brush style for your strokes.



C.

Toolbox

- Step 7: Click on the workspace and drag the mouse pointer to draw freehand strokes with the brush.
- 3. The Rectangle Select tool is used to select a rectangular portion of an image. It is ideal for selecting objects with rectangular shapes or straight edges.

The Ellipse Select tool is used to select an oval or circular portion of an image. It is perfect for selecting objects with curved edges or circular shapes.

Mind Boggler



- **A.** 1. Nazia can use Fuzzy Select tool to select edges of an image automatically.
 - 2. Rajesh can use the Paintbrush tool to add a painting effect to his drawing.

В.



1. Paintbrush tool

2. Text tool

3. Gradient Fill tool

7. More on HTML

Checkpoint

4. Color



A. 1. b

1. <P>

- 2. b
- 3. b
- 4. d

4. T

5. c

5.Background-image

C. 1. T

B.

- 2. F
- 3. F
- 3. <sub>
- 5. T
- **D.** 1. <H3> Third Level heading </H3>
 - 2. The CSS properties used in the code are:

2. Horizontal

- Font-family
- Text-align
- Color
- 3. background-repeat property specifies the repetition of an image on the web page.

E. 1. Two font properties with their values are:

Font-style: It can have values normal, italic.

Font-weight property: It has values normal, bold, bolder, lighter.

2. Ravi should use the text-decoration property to underline the text.





1. Himani can use the following font properties to display book titles in various fonts and colors: font-family: to specify the font face

color: to specify the color of the text

2. To use Dhanush's photo as a background image, the CSS code would be:

body {
background-image: url("dhanush-photo.jpg");
}

Riya can use the <HR> tag to draw horizontal lines to separate event descriptions, schedules, and location details.

8. Lists and Tables in HTML

Checkpoint



- **A.** 1. a
- 2. b
- 3. b
- 4. b
- 5. c

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

- C. 1. Ordered list
- 2. Disc

3. <TH>

- 4. BORDER-STYLE
- 5. Table Data
- **D.** 1. The tag is used to define an unordered list, which can have various bullet styles applied using the TYPE attribute or the list-style property in CSS.
 - 2. <OL STYLE="list-style-type:lower-alpha;">
- **E.** 1. The border-spacing property in a table is used to specify the distance between the borders of adjacent cells.

Syntax:

```
BORDER-SPACING: length;
```

2. TABLE {

BORDER: 3px;



```
BORDER-COLOR: red;
    BORDER-SPACING: 10px;
}
td, th {
    PADDING: 15px;
}
```

3. The ROWSPAN attribute is used to extend a cell for more than one row, allowing the cell to span two or more rows instead of one.

For example,

<TD ROWSPAN = "3">

Category	Types
	Badminton
Sports	Football
	Basketball

In the above table, the Sports cell spans three rows





- **A.** 1. Manish can use the following HTML tags to create a comparison table: <TABLE>, <TR>, <TH>, and <TD>.
 - 2. The most suitable HTML5 tag would be , which defines an unordered list.
 - 3. Rakesh can use the background-color property to change the background color of a table on a web page.
- **B.** 1.
 - 2. <DL>
 - 3. <TR>
 - 4. WIDTH
 - 5. PADDING

Periodic Assessment 3

(Based on chapters 6 to 8)

A. <!DOCTYPE HTML>
<HTML>
<HEAD>

```
<STYLE>
TABLE, TH, TD
BORDER: 2px;
BORDER-STYLE: SOLID;
}
</STYLE>
</HEAD>
<BODY>
<TABLE>
<TR>
<TH>NAME</TH>
<TH>ADDRESS</TH>
<TH>GRADE</TH>
</TR>
<TR>
<TD>CHIRAG</TD>
<TD>DELHI</TD>
<TD>VIII</TD>
</TR>
</TABLE>
</BODY>
</HTML>
  Free Select Tool
                                                ► Fuzzy Select Tool
Rectangle Select
                                                Crop Tool
           Tool
   Paintbrush
        Tool
                                                  Zoom
                                                   Tool
Text Tool
```

В.

- **C.** 1. The ROWSPAN attribute is used to extend a cell for more than one row, allowing the cell to span two or more rows instead of one.
 - 2. The font-family property is used to specify the name of the font to be used.
 - 3. background-image is used to specify the image to be used in the background on the web page
 - 4. The border property is used to create a visible border around a table.
 - 5. The border-spacing property is used to set the space between the borders of adjacent cells in a table.

9. Algorithmic Intelligence



- **A.** 1. c 2. a
- **B.** 1. F 2. F 3. T 4. F 5. T

3. b

- **C.** 1. The raw data is collected, filtered, sorted, processed, analysed, stored, and then presented in a readable format, called information.
 - 2. An algorithm is a set of step-by-step instructions in a sequential manner to solve a problem.
- **D.** 1. Computers store and process information using binary language, which consists of 0s and 1s. The computer converts the information into binary language for processing. In binary, 1 represents an electrical signal being ON, and 0 represents it being OFF.
 - 2. The IF-THEN-ELSE condition is a programming statement that allows a program to execute different blocks of code based on a condition. If the condition is True, the program executes the statements inside the IF block. If the condition is False, the program executes the statements inside the ELSE block.
 - 3. READ day
 IF DAY = "Sunday" THEN
 PRINT "picnic"
 ELSE

PRINT "School"





A. 1. A world without electricity would drastically change our daily life. Without it, the use of any modern electric device would be impossible.

2. Do it yourself.

			,																
B.	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	4																		4
	4			2	2	3	3	1	1										4
	4			2	2	3	3	1	1										4
	4							2	2	1	1	3	3						4
	4							2	2	1	1	3	3						4
	4											2	2	1	1				4
	4											2	2	1	1	3	3		4
	4															3	3		4
	4																		4
	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

10. Conditional Statements in Python



- 7. a

- B. 1. True
- 2. False
- 3. top-down
- 4. elif
- 1. The output of the code will be x is less than or equal to 10.
 - 2. Abhi is using a single equals sign (=) for comparison. In Python, = is used for assignment, so he should use == for comparison.
- **D.** 1. The syntax of the if...else statement is:

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

2. If Meenakshi has used an if...else statement and the conditional expression always returns True, then the if block of statements will be executed. The else block will be skipped.

- E. 1. Zero
- 2. The product is: 40
- 3. Above ten

and also above 20!

```
if (x > 5):
    print("x is greater than 5")
y = 8
    if (y > 5):
        print("y is greater than 5")
x = 10
    if (x == 5):
        print("x is equal to 5")
```

Mind Boggler



- 1. Ravi should use an if-else statement to decide whether to allow users to access the feature based on their age.
- 2. Priya should use a nested if statement to check the conditions and execute the specific set of statements.

11. Al for SDGs

Checkpoint



- **A.** 1. c
- 2. a
- 3. c
- 4. b
- г -

- **B.** 1. SDG
- 2.70
- 3. 17.2
- 4. D
- ٥. ٠.

4. marine pollution

- **C.** 1. T
- 2. T
- 3. F
- 4. T
- **D.** 1. AI can help in improving the farming land, agriculture, quality of products, etc. AI can also help with aid distribution in poor and war-torn areas, or where natural disasters have caused heavy destruction.
 - 2. AI can help in achieving this goal by increasing the ability of healthcare professionals to analyse huge data sets, providing better feedback and finding accurately the cause of diseases to discover the cure.
 - 3. SDG 14 targets to prevent and reduce marine pollution, protect marine and coastal ecosystems, regulate harvesting and end destructive fishing practices, etc.
- **E.** 1. It aims to ensure equal opportunities and end discrimination by eliminating discriminatory laws, policies and practices. AI may help in improving industrial growth thereby improving the global financial market and institutions.



- 2. AI for climate action has the potential to reduce global greenhouse gas emissions by up to 4 percent. Using AI and data from NASA, researchers are able to identify patterns and monitor changes of land surfaces such as decreasing sea area, ice cap surfaces, etc.
- 3. The use of Artificial Intelligence can help achieve Sustainable Development Goal 4 by developing smart content, providing personalised guidance, round-the-clock assistance, virtual learning environments, and creating more secure online exams.

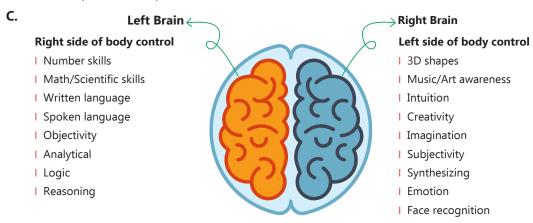


- 1. He can create a presentation in PowerPoint by relating the topic to SDG 15.
- 2. Gaurav is promoting SDG 5.

Periodic Assessment-4

(Based on chapters 9 to 11)

- A. Not eligible to drive
- **B.** 1. SDG 2 aims to end hunger issues by 2030 and ensure access to nutritious food for all children.
 - 2. For sustainable development, it's necessary that we end all forms of discrimination against women.
 - 3. SDG 8 aims to lessen the youth unemployment. It targets to provide opportunities for all to get work with fair income, security in the workplace and social protection for families.
 - 4. It aims to ensure equal opportunities and end discrimination by eliminating discriminatory laws, policies and practices.



Test Sheet-2

(Based on chapters 6 to 11)

Section A

A.	1. (ii)	2. (iv)	3. (ii)	4. (i)	5. (i)	6. (iii)
В.	1. F	2. F	3. F	4. F	5. F	6. F

C. 1. Toolbox 2. horizontal 3. disc 4. True 5. elif

6. marine pollution

Section B

- **A.** 1. Free Select tool, or Lasso tool, is used to select an object or a section of an image by drawing a freehand border around it.
 - 2. <H3> Third Level heading </H3>
 - 3. The tag is used to define an unordered list, which can have various bullet styles applied using the TYPE attribute or the list-style property in CSS.
 - 4. An algorithm is a set of step-by-step instructions in a sequential manner to solve a problem.
 - 5. The output of the code will be x is less than or equal to 10.
 - 6. AI can help in achieving this goal by increasing the ability of healthcare professionals to analyse huge data sets, providing better feedback and finding accurately the cause of diseases to discover the cure.
- **B.** 1. The Paintbrush tool is used to draw brush strokes, giving an effect of painting.

The steps to use the Paintbrush tool are:

- Step 1: Open an image in GIMP.
- Step 2: Select the Paintbrush Tool from the Toolbox.
- Step 3: Click on the active Foreground Color in the Toolbox to change the brush colour.
- Step 4: In the Change Foreground Color dialog box, select the desired colour for the Paintbrush and click OK to confirm.
- Step 5: Adjust the opacity and size of the brush in the Tool Options panel.
- Step 6: Select the type of brush from the Brushes tab to customise the brush style for your strokes.
- Step 7: Click on the workspace and drag the mouse pointer to draw freehand strokes with the brush.
- 2. Two font properties with their values are:

Font-style: It can have values normal, italic.

Font-weight property: It has values normal, bold, bolder, lighter.

3. The border-spacing property in a table is used to specify the distance between the borders of adjacent cells.

Syntax:

```
BORDER-SPACING: length;
```

- 4. The IF-THEN-ELSE condition is a programming statement that allows a program to execute different blocks of code based on a condition. If the condition is True, the program executes the statements inside the IF block. If the condition is False, the program executes the statements inside the ELSE block.
- 5. The syntax of the if...else statement is:

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

Indented block

6. AI for climate action has the potential to reduce global greenhouse gas emissions by up to 4 percent. Using AI and data from NASA, researchers are able to identify patterns and monitor changes of land surfaces such as decreasing sea area, ice cap surfaces, etc.