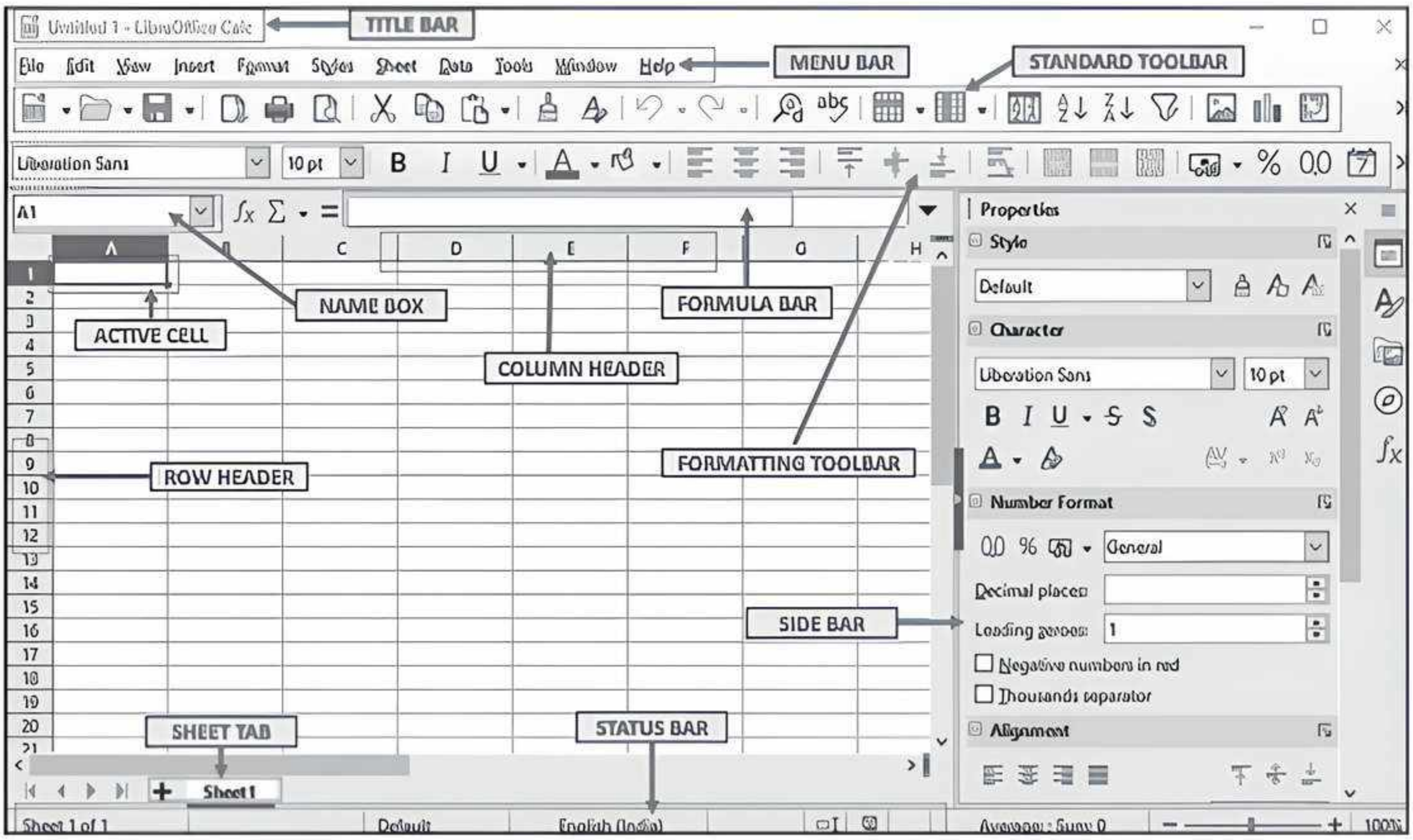
Electronic Spreadsheet

Fastrack REVISION

- **Spreadsheet Software:** A Spreadsheet software is an application software that is used for doing tasks such as numerical and statistical calculations, scientific calculations, data interpretation, financial and accounting data analysis, budgeting and much more. There are different spreadsheet software such as Lotus 1.2.3, Microsoft Excel, Corel Quattro Pro, OpenOffice programs such as Calc and much more.
- **Features of a Spreadsheet Software:** A spreadsheet software or a spreadsheet processor is an application software that is used to organise and to analyse data in a tabular form.
  - Spreadsheet software is utilised for manipulation of data and creation of workbook files comprising one/more related worksheets.
  - It has many in-built tools, such as formulas and functions that help in manipulating data.
  - It allows you to analyse data in a quick and presentable manner with the help of charts and graphs.
  - It has in-built features, such as Autofill, that help in filling in the series of data, automatically.
- **Calc:** It is the spreadsheet component of LibreOffice. You can enter data (usually numerical) in a spreadsheet and then manipulate this data to produce certain results. Alternatively, you can enter data and then use Calc in a 'What if...' manner by changing some of the data and observing the results without having to retype the entire spreadsheet or sheet.
- **Spreadsheets, Sheets and Cells:** Calc works with documents called **Spreadsheets**. Spreadsheets consist of a number of individual sheets, each sheet containing cells arranged in rows and columns. A particular cell is identified by its row number and column letter. **Cells** hold the individual elements – text, numbers, formulas and so on – that make up the data to display and manipulate. Each spreadsheet can have up to 10,000 sheets and each sheet can have a maximum of 1,048,576 rows and 1,024 columns.
- **Calc Main Window:** When Calc is started, the main window opens. The parts of this window are described below:



- **Title Bar:** The Title bar, located at the top, shows the name of the current spreadsheet. When a spreadsheet is newly created from a template or a blank document, its name is Untitled X, where X is a number. When you save a spreadsheet for the first time, you are prompted to enter a name of your choice.

- **Menu Bar:** When you select an item on the Menu bar, a sub-menu drops down to show commands.
  - **File:** Contains commands that apply to the entire document; for example, Open, Save, Wizards, Export as PDF, Print, Digital Signatures.
  - **Edit:** Contains commands for editing the document; for example, Undo, Copy, Changes, Fill, Plug-in.
  - **View:** Contains commands for modifying how the Calc user interface looks; for example, Toolbars, Column & Row Headers, Full Screen, Zoom.
  - **Insert:** Contains commands for inserting elements into a spreadsheet; for example, Pictures, Frames, Special Characters, Charts, Functions.
  - **Format:** Contains commands for modifying the layout of a spreadsheet; for example, Cells, Page, Styles and Formatting, Alignment.
  - **Sheet:** Contains the most often used commands for handling sheets, such as Insert and Delete Cells, Columns, Rows and Sheets, as well as Comments and Fill cells.
  - **Data:** Contains commands for manipulating data in the spreadsheet; for example, Define Database Range, Sort, Statistics, Pivot Tables and Consolidate.
  - **Tools:** Contains various functions to help you check and customise the spreadsheet; for example, Spelling, Share Document, Gallery, Macros.
  - **Window:** Contains commands for the display window; for example, New Window, Split.
  - **Help:** Contains links to the LibreOffice help system and other miscellaneous functions; for example, Help, License Information and Check for Updates.
- **Toolbars:** The default setting when Calc opens is for the Standard and Formatting toolbars to be docked at the top of the workspace.
- **Formula Bar:** The Formula Bar is located at the top of the sheet in the Calc workspace. The Formula Bar is permanently docked in this position and cannot be used as a floating toolbar. If the Formula Bar is not visible, go to View on the Menu bar and select Formula Bar. From left to right, the Formula Bar consists of the following:
  - **Name Box:** It gives the current active cell reference using a combination of a letter and number, for example, A1. The letter indicates the column and the number indicates the row of the selected cell.
  - **Function Wizard:** Opens a dialog from which you can search through a list of available functions. This can be very useful because it also shows how the functions are formatted.
  - **Sum:** Clicking on the Sum icon totals the numbers in the cells above the selected cell and then places the total in the selected cell. If there are no numbers above the selected cell, then the cells to the left are totaled.
  - **Function:** Clicking on the Function icon inserts an equals (=) sign into the selected cell and the Input
  - **Input Line:** Displays the contents of the selected cell (data, formula, or function) and allows you to edit the cell contents. To turn the Input line into a multiline input area for very long formulas, click the dropdown button on the right.
- **Status Bar:** The Calc status bar provides information about the spreadsheet as well as quick and convenient ways to change some of its features. The status bar has a quick way to do some math operations on selected cells in the spreadsheet.
- **Sidebar:** The Calc Sidebar (View > Sidebar) is located on the right side of the window. It is a mixture of toolbar and dialog. It is similar to the sidebar in Writer and consists of five decks: Properties, Styles and Formatting, Gallery, Navigator and Functions. The decks are described below:
- **Spreadsheet Layout**
  - **Individual Cells:** The main section of the workspace in Calc displays the cells in the form of a grid. Each cell is formed by the intersection of one column and one row in the spreadsheet. At the top of the columns and the left end of the rows are a series of header boxes containing letters and numbers.
  - The column headers use an alpha character starting at A and go on to the right. The row headers use a numerical character starting at 1 and go down. These column and row headers form the cell references that appear in the Name Box on the Formula Bar. If the headers are not visible on the spreadsheet, go to View on the Menu bar and select Column & Row Headers.
  - **Sheet Tabs:** In Calc, you can have more than one sheet in a spreadsheet. At the bottom of the grid of cells in a spreadsheet are sheet tabs indicating how many sheets there are in the spreadsheet. Clicking on a tab enables access to each individual sheet and displays that sheet.
- **Starting New Documents:** You can start a new, blank document in LibreOffice in several ways.
  - Use **File > New** on the **Menu bar** and select the type of document from the context menu.
  - Use the keyboard shortcut **Ctrl+N** to create a new document. The type of document created depends on which LibreOffice component is open and active. For example, if Calc is open and active, a new spreadsheet is created.
  - Use **File > Wizards** on the Menu bar and select the type of document from the context menu.
  - If a document is already open in LibreOffice, click the **New** icon on the **Standard toolbar** and a new document of the same type is created in a new window.
- **Opening Existing Documents:** You can also open an existing document in one of the following ways:
  - When no document is open, click **Open File** or **Remote files** in the **Start Center** to reach the Open dialog.
  - Go to **File > Open** or **File > Open Remote File...** on the Menu bar the reach the Open dialog.
  - Use the keyboard shortcut **Ctrl+O** to reach the

- If a document is already open, click the Open icon on the Standard toolbar and select from a list of available documents from the Open dialog.
- Click the **small triangle** to the right of the Open icon and select from a list of recently opened documents.
- When no document is open, **double-click** on a thumbnail of recently opened documents displayed in the **Start Center**. You can scroll up or down in the Start Center to locate a recently opened document.

- **Saving Documents:** You can save documents as follows:
  - **Save Command:** Use if you are keeping the document, its current filename and location.
  - **Save to Remote Server:** Use if your document is already stored in a remote server or will be stored in a remote server.
  - **Save As:** Use if you want to create a new document, or change the filename and/or file format, or save the file in a different location on your computer.
  - **Save a Copy:** Use if you want to save a copy of your current document and keep it open for more editing.
  - **Save All:** Use to save all the open files open in your current session.
- **Save Command:** To save a document if you are keeping the document's current filename and location, do one of the following:
  - Use the keyboard shortcut **Ctrl+S**.
  - Go to **File > Save**, **File > Save** to **Remote Server**, **File > Save** a Copy, or **File > Save** All on the Menu bar.
  - Click the **Save Icon** on the **Standard toolbar**.
- **Save As Command:** To save a document if you want to create a new document, or change the filename and/or file format, or save the file in a different location on your computer:
  - Use the keyboard shortcut **Ctrl+Shift+S**.
  - Go to File > Save As on the Menu bar.
- **Editing A Worksheet:** When a new workbook is opened, the cells are set to a default size. But sometimes, you may want to modify the cell size, to add or delete more cells, rows, columns, etc. Let us learn how to edit a worksheet.
  - **Editing Cell Contents:** Sometimes, after entering text in the cell, we need to edit the text. For this, we can perform the following two options:
    - **Replacing the Text:** To replace the text of the cell, we need to click on the cell and make it active. Then, we can type the new text from the keyboard to replace the old one.
    - **Modifying the Text:** If we have typed incorrect spellings or made any other error, in the content of the text, we can modify it. We can do this by using any of the following ways:
      (a) Click on the cell to make it active. Then, click on the formula bar and modify the text.
      (b) Make the cell active and then press the F2 key. Now edit the text.
      (c) Double-click on the cell and edit the text.
- **Formatting Data in a Worksheet:** Data can be organised into a general format in a worksheet by formatting it. When you want to draw attention to some specific data or want to make your worksheet visually appealing, you should opt for formatting the data in a worksheet. For example, if you want to highlight the column headers of the worksheet, or want to change the colour of some specific cells to draw attention, you can do this by using different formatting options available in calc, to format data such as text, number and date. Let us learn those formatting options in detail here.
- **Formatting Font:** The options for formatting the font are found under the Tools -> Options-> Fonts.

  We use the given options to work with the font of the data. We can perform the following operations using the **Font Group**:
  - Changing font
  - Changing font size
  - Changing font colour
  - Changing text style
- **Creating Series/Autofill:** Pattern-based data is recognised by calc instantaneously and can be used to fill-up data automatically. The calc Autofill feature can be used to populate a range of cells with either a repeated value or a series of numeric values, for example, number series, dates, days of the week, months in a year and much more.
- **Autofill Dates and Times:** As dates and times are stored in calc as numbers, these can also be used with the Autofill. By default, if we just type in a single date or time and drag the Fill handle, dates and times will get completed in a series, by adding one day (for dates), or one hour (for time). However, for dates, there are additional Autofill options. Apart from the four options for simple numbers, there are some more options as follows:
  - **Fill Days:** Look for a pattern in the day when filling the selected cells.
  - **Fill Weekdays:** Look for a pattern in the day when filling the selected cells, but do not include Saturdays or Sundays in the series.
  - **Fill Months:** Look for a pattern in the month when filling the selected cells.
  - **Fill Years:** Look for a pattern in the year when filling the selected cells.
- **Formulas in Calc:** Formulas are used to carry out calculations that involve basic arithmetic operations such as addition, multiplication, subtraction and division in calc. You must have used formulas in mathematics, but in calc, formulas are written in a different manner.
- **Calc Provides Following Types of Formulas:**
  - **Simple Formula:** A simple formula is an expression that is made up of numbers, arithmetic operators, cell addresses and parentheses.
    - **Components of a Formula:** The following are the components that make up a basic Excel formula.
    - **Operators:** They are special characters like +, – , >, < , /, * , ^ , % that specify the arithmetic calculation to be carried out.

- **Cell References:** These are the cell addresses or the cell ranges that contain the values to be used in calculations, for example, A3, B2, A2:A6.
- **Constants:** They are the fixed numeric or string values, for example, 56,789 (numeric), "Hello", "Welcome" (string) that are used in calculations.
- **Functions:** They are the in-built formulas whose meaning and purpose are already defined in Calc 2010, for example, Sum, Max, Min, Sub and many more.
- **Equal to (=) Symbol:** It is used to start an Calc formula.
- **Parenthesis:** They are used to enclose cell ranges, for example, Sum (C1:C4).

➤ **Compound or Complex Formula:** Compound Formula, also known as Complex Formula contains more than one operator. A formula to calculate simple interest like (Principal amount * Rate of interest * Time)/100 is an example of a compound formula.

➤ **Text Formulas:** Text formulas are used to add characters and string values. Joining of strings is known as Concatenation. Strings can be added using & symbol. Perform the below mentioned steps to join two strings:

- **Step 1:** Type two strings 'I Love' and 'My Country' in cells A1 and B1, respectively.
- **Step 2:** Now for adding these two, write the formula =A1&" "&B1 in the cell C1 and press the Enter key.
- **Step 3:** 'I Love My Country' will be displayed in the cell C1.

▶ **Cell Reference:** Cell Address, in a formula, is known as Cell Reference. Cell Reference is used for identifying a cell or a range of cells, in a worksheet. References help to look for the values which are to be used in a formula in different parts of a worksheet.

▶ **Types of Cell References:** There are three different types of cell references, in calc:

➤ **Relative Cell Reference:** It is based on the relative position of the cell contained in the formula. A spreadsheet cell reference, by default, is known as relative. When a formula is copied and pasted to other cells, the cell reference in the formula or the function changes relatively to the location where it is copied. For example, if a formula =SUM(C3:G3) is written in the cell H3 and is copied to H4, then the formula will automatically change to =SUM(C4:G4) for the cell H4.

➤ **Absolute Cell Reference:** When the cell address is not changed in a formula, while copying it to other cells, it is known as absolute cell reference. You can add a dollar sign ($) in front of a row address and column address to make the absolute cell reference of a cell. If a cell contains a value that needs to remain fixed in a formula, we should specify the cell reference of that cell as absolute cell reference. $H$2, $A$4 are some examples of absolute cell references.

➤ **Mixed Cell Reference:** It is a combination of both, *i.e.*, absolute and relative cell references. A mixed cell reference is either an absolute row and a relative column or an absolute column and a relative row. We add the $ sign before the column name to create an absolute column or before the row number to create an absolute row.

▶ **Functions:** A function is a pre-defined formula that performs calculations using specific values in a particular order. Functions can be used to carry out simple as well as complex calculations. Functions save time as one does not need to write the formula. Also, writing down formulas for doing calculations can be tedious and complicated at times.

▶ **Some Commonly Used Functions:** There are many pre-defined functions in calc which we can use. The following table lists some commonly used functions in calc, along with their purpose and examples.

Function Name	Purpose	Example
SUM(range)	It calculates the sum of a given range.	=SUM(A4:B6)
AVERAGE(range)	It calculates the average of a given range.	=AVERAGE(A4:B6)
COUNT(range)	It counts the number of cells in range.	=COUNT(A4:B6)
TODAY()	It displays the current date.	=TODAY()
INT(number)	It rounds off a number to the nearest integer.	=INTEGER(102.78) or =INTEGER(C5)
ODD(number)	It returns a number rounded up to the nearest odd integer.	=ODD(102.78) or =ODD(C5)
ROUND(number, num_digits)	It rounds off a number to specified digits.	=ROUND(234.567,1) or =ROUND(C5)
SQRT(number)	It returns a square root.	=SQRT(16) OR =SQRT(C5)

▶ **Autosum Feature:** The AutoSum feature in calc is used to automatically add the values, given in the selected cells. A range of cells can easily be added using the AutoSum option on the Formulas tab. AutoSum recognises the data that is consecutively entered and when it sees an empty cell, thse AutoSum stops. We can also use the AutoSum feature to perform other calculations, such as AVERAGE, COUNT, MAX and MIN.

- **Embedding Charts in a Worksheet:** A chart is a graphical representation of data entered in a worksheet that makes it easier for a user to comprehend data. Charts help you to analyse and compare the data, instantly. Click the **Insert Chart** icon on the **Standard toolbar**.
- **Keyboard Shortcuts:**

Ctrl + Home	Move cursor to A1
Ctrl + End	Move cursor to last cell with data inside
Home	Move cursor to first cell of the row
End	Move cursor to last cell of the row
Shift + Home	Select from current cell to first cell of the row
Shift + End	Select from current cell to last cell of the row
Shift + Page up	Select from the current cell up a page
Shift + Page down	Select from the current cell down a page
Ctrl + 1	Open Format cells
Ctrl + Shift + 1	Two decimal places
Ctrl + Shift + 2	Exponential format
Ctrl + Shift + 3	Date format
Ctrl + Shift + 4	Currency format
Ctrl + Shift + 5	Percentage format
Ctrl + Shift + 6	Standard format
Ctrl + F1	Show comment
F2	Enter Edit mode
Ctrl + F2	Open Function wizard
Shift + Ctrl + F2	Move cursor to Input line
Ctrl + F3	Open Define names
Shift + Ctrl + F4	Show/hide Database explorer
F4	Rearrange references
F5	Show/hide Navigator
Shift + F5	Traces dependents
Shift + Ctrl + F5	Moves cursor to Sheet area
F7	Check spelling
Shift + F7	Traces precedents
Ctrl + F7	Opens Thesaurus
F8	Enable/disable additional selection mode
Ctrl + F8	Highlight cells containing values
F9	Recalculate formulas in current sheet
Ctrl + F9	Update chart
Ctrl + Shift + F9	Recalculate formulas in all sheets
F11	Open Styles
Shift + F11	Create a document template
Shift + Ctrl + F11	Update the template
F12	Group the selected data range
Ctrl + F12	Ungroup the selected data range

Practice *Exercise*

? Multiple Choice Questions

Q 1. Which of the following help us to perform various calculations?

a. Writer b. Spreadsheet
c. Impress d. None of these

Q 2. Spreadsheet is used for:

a. managing financial and accounting documents
b. creating data reports
c. data analysis
d. All of the above

Q 3. Spreadsheet packages also provide built-in ..... formulae.

a. Mathematical b. Statistical
c. Both a. and b. d. None of these

Q 4. Which of the following is not a Spreadsheet Software?

a. Microsoft Excel b. LibreOffice Calc
c. OpenOffice Calc d. None of these

Q 5. In .....Operating System, the LibreOffice gets installed by default.

a. Windows b. Linux (Ubuntu)
c. Both a. and b. d. None of these

Q 6. Method to open LibreOffice Calc in Windows is:

a. double-click the shortcut of LibreOffice Calc on desktop
b. click the window menu, select LibreOffice application, then click LibreOffice Calc
c. Both a. and b.
d. None of the above

Q 7. Quick Access Tool bar Icon is present on .....

a. Menu bar b. Standard Tool bar
c. Title bar d. Status bar

Q 8. Default name of spreadsheet open in LibreOffice Calc is .....

a. untitled X, where X is a number
b. calc X, where X is a number
c. spreadsheet X, where X is a number
d. None of the above

Q 9. In LibreOffice Calc Scroll bar is present on ..... and ..... side of window.

a. left, right b. right, top
c. bottom, right d. top, bottom

Q 10. By default ..... sheets is/are present in LibreOffice Calc Spreadsheet.

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

Q 11. In LibreOffice Calc, Row headings are in .....

a. numbers b. alphabets
c. alphanumeric d. None of these

Q 12. ..... contains the menus with commands for various tasks.

a. Status bar b. Standard Toolbar
c. Formatting Toolbar d. Menu bar

Q 13. ..... is located just below the Title bar.

a. Standard Toolbar b. Menu bar
c. Formatting Toolbar d. None of these

Q 14. ..... is the shortcut to exit LibreOffice.

a. Ctrl + Q b. Ctrl + E
c. Ctrl + X d. None of these

Q 15. Cut, Copy, Paste options are available in ..... menu.

a. File b. Edit c. Format d. View

Q 16. Insert Cells, Insert Rows, Insert Columns options are available in ..... menu.

a. File b. Insert c. Sheet d. Data

Q 17. Placing the mouse cursor over any icon displays a small box called ..... which gives a brief explanation of the Icon.

a. Toolbar b. Toolbox
c. Tooltip d. All of these

Q 18. ..... shows the address of Active Cell.

a. Name Box b. Current Cell
c. Formula bar d. None of these

Q 19. The Worksheet in Calc is also referred to as .....

a. Workbook b. Spreadsheet
c. Sheet d. None of these

Q 20. Columns are ..... in the table.

a. horizontal b. vertical
c. diagonal d. None of these

Q 21. Column Heading of 27th Column in Calc sheet is .....

a. AA b. AB c. Z d. ZA

Q 22. The intersection of a row and column is called .....

a. Cell Address b. Cell
c. Point of Intersection d. None of these

Q 23. Which of the following is invalid Cell Address?

a. A1 b. Z247
c. 91A d. None of these

Q 24. Which of the following is not true about Currently Selected Cell?

a. Currently Selected cell is called Active cell
b. Currently Selected Cell's Address is visible in Name box
c. Currently Selected Cell have thick border
d. None of the above

Q 25. Address of cell formed by intersection of tenth column and nineteenth row is .....

a. K19 b. 19K c. J19 d. 19J

Q 26. Cell address of first row and first column .....

a. A1 b. 1A
c. A-1 d. None of the above

Q 27. Which key combination moves the active cell (Selected Cell) to the end of the data range in a particular direction?

a. Ctrl + Home b. Ctrl + End
c. Ctrl + Arrow keys d. None of these

Q 28. Which key combination moves the active cell (Selected Cell) to A1 cell?

a. Ctrl + Home b. Ctrl + End
c. Ctrl + Arrow keys d. None of these

Q 29. Which key / key combination moves the worksheet one screen up?

a. Ctrl + Up Arrow Key b. Ctrl + Page Up
c. Page Up d. None of these

Q 30. A block of adjacent cells in a worksheet which is highlighted or selected is called .....

a. Block of cells b. Range of cells
c. Both a. and b. d. None of these

Q 31. In LibreOffice Calc, ... is any text entered by using a keyboard.

a. Values b. Poster
c. Label d. None of these

Q 32. By default labels are ..... aligned.

a. left b. right
c. top d. None of these

Q 33. The data consisting of only numbers are called .....

a. Labels b. Values
c. Functions d. None of these

Q 34. By default Values are ..... aligned.

a. top b. right
c. left d. None of these

Q 35. Any expressions that begins with an equals '=' is treated as .....

a. function b. formula
c. both a. and b. d. None of these

? Fill in the Blanks

Type Questions

Q 36. The column immediately next to column "Z" is .....

Q 37. The default extension of a workbook created using a LibreOffice Calc spreadsheet is .....

Q 38. The spreadsheet feature used to continue the series is called as .....

Q 39. The formula "=MIN(C1:C5)" stored in cell C6 when copied to cell D6 changes to .....

Q 40. The formula in cell A2 is =B2+C3. On copying this formula to cell C2, C2 will change to .....

Q 41. The cell address of the cell formed by the intersection of the ninth column and the eighth row will be .....

Q 42. $A1$B2 is an example of ..... referencing in spreadsheet software.

? Assertion and Reason

Type Questions

Directions (Q. Nos. 43-47): *In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option.*

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q 43. Assertion (A): A spreadsheet software or a spreadsheet processor is a system software that is used to organise and to analyse data in a tabular form.
Reason (R): Spreadsheet software is utilised for manipulation of data and creation of workbook files comprising one/more related worksheets.

Q 44. Assertion (A): A worksheet is the actual area where you work in calc. It is like a page in a notebook, where we write and note down our information.
Reason (R): A workbook is actually like a notebook that has multiple pages with cells in it. It contains three worksheets by default, but more worksheets can be added depending upon the requirement.

Q 45. Assertion (A): The Quick Access toolbar contains the commands that are frequently used such as Save, Undo and Redo.
Reason (R): The Name box displays the cell address of an active cell. A cell address is made up of row number and column number such as C7, D8, etc.

Q 46. Assertion (A): Cell is the area which accepts a value such as number, text or formula. The intersection of a row and a column makes a cell.
Reason (R): The Status bar displays the sheet information as well as the insertion point location. From left to right, this bar contains the total number of pages and words in the document and other information such as language used, etc.

Q 47. Assertion (A): The options for formatting the font are found under the Font group on the Insert tab.
Reason (R): The Insert worksheet button on the sheet tab is used to insert a new worksheet in the workbook.

Answers

1. (b)	2. (d)	3. (c)	4. (d)	5. (b)	6. (c)
7. (c)	8. (a)	9. (c)	10. (a)	11. (a)	12. (d)
13. (b)	14. (a)	15. (b)	16. (c)	17. (c)	18. (a)
19. (c)	20. (b)	21. (a)	22. (b)	23. (c)	24. (d)
25. (c)	26. (a)	27. (c)	28. (a)	29. (c)	30. (b)
31. (c)	32. (a)	33. (b)	34. (b)	35. (b)	

36. AA
37. .ods
38. Fill Handle
39. =MIN(D1:D5)
40. =D2 + E3
41. I8
42. mixed
43. (d) **44.** (b) **45.** (c) **46.** (b) **47.** (d)

? Case Study Based

Questions

Case Study 1

A cell range in a spreadsheet file is a collection of selected cells. This range is usually symmetrical (square), but can exist of separate cells just the same. A cell range can be referred to in a formula as well.
In a spreadsheet, a cell range is defined by the reference of the upper left cell (minimum value) of the range and the reference of the lower right cell (maximum value) of the range. Eventually separate cells can be added to this selection, then the range is called an irregular cell range. In spreadsheet, the minimum and maximum value are included. That's different from a mathematical range, in which it is a collection of values between a maximum and a minimum value.
When entering a range of cell references as an argument for a function or when creating a chart, in addition to typing in the range manually, the range can also be selected using pointing. Ranges are identified by the cell references or addresses of the cells in the upper left and lower right corners of the range. These two references are separated by a colon. The colon tells spreadsheet to include all the cells between these start and endpoints.

Q 1. Range of cell C2 : C7 includes ..... cells
a. 4 b. 5 c. 6 d. 7

Q 2. C3 : F3 is an example of .....
a. Column range
b. Row range
c. Row and Column range
d. None of the above

Q 3. Cell Range A1:D3 consist of ..... cells.
a. 3 b. 4 c. 12 d. 10

Q 4. ..... key is used to select more than one 'range of cells' in a worksheet.
a. Ctrl b. Shift
c. Alt d. None of these

Q 5. What is the address of the first cell represented by Range D34 : F40?
a. F40 b. D34 c. D40 d. F34

Answers

1. (c) 2. (b) 3. (c) 4. (b) 5. (b)

Case Study 2

Operators in Spreadsheet specifies the type of calculation to be performed on a given set of values. Obviously not restricted to numeric values only, we can use operators over different data types other than numeric (for example, Text/Character data type). Spreadsheet has a rich variety of operators to perform calculative actions on a given set of data.

Arithmetic Operators are used for arithmetic operations like addition, subtraction, multiplication, division, etc. Arithmetic operators follow the order precedence. Exponential and Percentage operators have the highest precedence and then Multiplication and Division followed by Addition and Subtraction. Logical or Comparison Operators are used in Spreadsheet to logically compare the two values (numeric or text).

Q 1. LibreOffice Calc uses ..... operator for division.

a. // b. \
c. / d. None of these

Q 2. Which of the following symbol is used for exponentiation (power) in LibreOffice Calc?

a. ^^ b. /^
c. ^ d. None of these

Q 3. Evaluate the following formula:
= (5*4)^2

a. 40 b. 80
c. 400 d. None of these

Q 4. Evaluate the following formula:
= 16/(4^2)

a. 0 b. 1 c. 16 d. 8

Q 5. Evaluate the following formula:
=1+2^2-2

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

Answers

1. (c) 2. (c) 3. (c) 4. (b) 5. (c)

Case Study 3

Spreadsheet as the name suggests is one big table or chart with data spread all over the page. Before the advent of computer programs, paper spreadsheets were used to record data for financial analysis. The accountant had to spend several hours recording data in tiny rows and columns and calculating results using a calculator. All the work had to be done using pencil and could only be penned when one was sure that the data is not going to change. The introduction of spreadsheet on computers revolutionised the world of number juggling. It allowed user to quickly enter data electronically and edit it as required. Even complicated calculations could be performed and the data could be presented in the form of graphs and charts for easier comparison of two sets of data.

Q 1. On a spreadsheet the active cell is indicated by:

a. a dotted border b. a dark wide border
c. a blinking border d. by Italic text

Q 2. Which of the following keyboard shortcut can be used for inserting comment?

a. Ctrl+Alt+C b. Shift+Alt+C
c. Ctrl+Shift+C d. Ctrl+Alt+S

Q 3. Which key is used For help in Ms Excel?

a. F2 b. F1
c. F3 d. None of These

Q 4. Which shortcut key is used to insert cell in LibreOffice Calc?

a. Ctrl + b. Ctrl ++ c. Shift ++ d. Shift +

Q 5. Which of the following is not a valid zoom percentage in Excel?

a. 10 b. 400 c. 100 d. 300

Answers

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

Case Study 4

LibreOffice Calc is the spreadsheet component of the LibreOffice software package. After forking from OpenOffice.org in 2010, LibreOffice Calc underwent a massive re-work of external reference handling to fix many defects in formula calculations involving external references and to boost data caching performance, especially when referencing large data ranges.

Calc is the spreadsheet component of LibreOffice. Spreadsheets allow us to organise, analyse and store data in tabular form. Furthermore in a spreadsheet we can manipulate this data to produce certain results. Other features provided by Calc include:

- Functions, which can be used to create formulas to perform complex calculations on data.
- Database functions to arrange, store and filter data.
- Dynamic charts giving a wide range of 2D and 3D charts.
- Ability to open, edit and save Microsoft Excel spreadsheets.

Q 1. Cell A1 contains the number 10 and B1 contains 5. What will be the contents of cell C1, if the formula =A1+B1*2^3 is entered in cell C1?

Q 2. The contents of Cell A1, B1, C1 and D1 are 5, –25, 30 and –35, respectively. What will be the value displayed in cell E1 which contains the formula =MIN(A1:D1).

Q 3. Cell D5 contains the formula =$B$5+C5 and this formula is copied to cell E5, what will be the copied formula in cell E5?

Q 4. Cell D5 contains the formula =$B5 + C5 and this formula is copied to cell E5, what will be the copied formula in cell E5?

Q 5. Cell D5 contains the formula =$B5 + C$5 and this formula is copied to cell E6, what will be the copied formula in cell E6?

Answers

1. 50
2. -35
3. =$B$5+D5
4. =$B5 + D5
5. =$B5 + D$5

Case Study 5

Cell Reference: A cell reference in calc refers to the value of a different cell or cell range on the current worksheet or a different worksheet within the spreadsheet. A cell reference can be used as a variable in a formula. The simplest cell reference appears as a simple mention of the referred cell after an equal sign. For example (=C5) refers to the value within cell C5. It means that the value of the current cell is equal to the value of C5.The notation (=A1:C6) refers to cell range A1 through C6. Independently it doesn't mean anything and calc will return standard error #VALUE! You can find more information about standard calc errors in our calc Guideline for Professionals: Don't Neglect calc Errors! But when the reference to a range is used in a function, the magic happens. For example =SUM(A1:C6) will return the total value of the cell range A1 through C6 and =AVERAGE(A1:C6) returns the average of this cell range.

Q 1. Define Cell Reference.

Q 2. Name all the types of cell references.

Q 3. Give an example of Relative cell reference.

Q 4. What do you mean by Absolute cell reference?

Q 5. Define Mixed cell reference.

Answers

1. Cell Reference is used for identifying a cell or a range of cells, in a worksheet. References help to look for the values which are to be used in a formula in different parts of a worksheet.
2. There are three different types of cell references:
   (i) Relative cell reference
   (ii) Absolute cell reference
   (iii) Mixed cell reference
3. If a formula =SUM(C3:G3) is written in the cell H3 and is copied to H4, then the formula will automatically change to =SUM(C4:G4) for the cell H4.
4. When the cell address is not changed in a formula, while copying it to other cells, it is known as absolute cell reference.
5. Mixed cell reference is a combination of both, *i.e.*, absolute and relative cell references. A mixed cell reference is either an absolute row and a relative column or an absolute column and a relative row.

? Very Short Answer Type Questions

Q 1. What do you mean by Spreadsheet/Electronic Spreadsheet?

Ans. A spreadsheet is a grid which interactively manages and organises data in rows and columns. It is also called as Electronic Spreadsheet.

Q 2. In which operating system LibreOffice installed by default?

Ans. Linux(Ubuntu)

Q 3. Name any three components of LibreOffice.

Ans. Three components of LibreOffice are:
(i) LibreOffice Calc
(ii) LibreOffice Writer
(iii) LibreOffice Impress

Q 4. How to start the LibreOffice Calc in Windows?

Ans. Steps to start the LibreOffice Calc in Windows are:
Double-click the shortcut of LibreOffice on the Desktop.

OR

Click the window menu, select LibreOffice application, then click LibreOffice Calc.

Q 5. How to start the LibreOffice Calc in Linux?

Ans. In Ubuntu Linux, find the Calc icon on application launcher or search it by clicking on "Show Application" and then click on icon.

Q 6. What is a chart?

Ans. A chart is a graphical representation of data entered in a worksheet that makes it easier for a user to comprehend the data. Charts help you to analyse and compare the data, instantly.

Q 7. Define the term workbook.

Ans. A workbook is a collection of worksheets.

Q 8. Reena is new to Calc. Her instructor has asked her to open Calc on her PC and questioned about active cell. Help Reena in identifying the active cell on her screen.

Ans. An active cell is a cell with heavy black colour boundary.

Q 9. What is the default alignment of number, text and formula in a spreadsheet?

Ans. Default alignment of text or label entry is left alignment and for numbers and formula it is right alignment.

Q 10. Elaborate the formatting necessary.

Ans. With formatting, we can make some data to be bolder, rotated or in different colour. So, basically formatting provides worksheet a neater and more legible outlook.

Q 11. Soham has clicked on the cell residing at the intersection of first row and ninth column. What will be the address of the selected cell?

Ans. First row and ninth column address will be II.

Q 12. In Calc, how many ways are there to express/ format a number?

Ans. Numbers in Calc can be expressed in many different formats like date, time, percentage or decimals.

Q 13. Name the toolbar of spreadsheet which has all the options of changing the font properties.

Ans. Formatting Toolbar

Q 14. What do you mean by relative referencing?

Ans. Cell referencing in which the cells are referred by their relative position in the worksheet relative to a particular cell is called relative referencing.

Q 15. The cell A1 has value Monday. If you are asked to click and drag the Fill handle of A1 downside then what will be the contents of cell A2, A3, A4 and A5?

Ans. Cells A2, A3, A4 and A5 will contain Tuesday, Wednesday, Thursday and Friday respectively.

Q 16. If = 6 -5 °2 is entered in a cell, then what will be the cell content?

Ans. -4 will be contained in cell as a result.

Q 17. What do you mean by Tooltip?

Ans. When we place the mouse cursor over any icon, it displays a small box called a tooltip. It gives a brief explanation of the icon function.

Q 18. What do you mean by Worksheet in Calc?

Ans. The worksheet in Calc is also referred to as spreadsheet. Each sheet can have many individual cells arranged in rows and columns.

Q 19. Name the basic element or building block of spreadsheet.

Ans. Cell

Q 20. What do you mean by Cell?

Ans. The intersection of a row and column is called a cell.

Q 21. What do you mean by Active Cell?

Ans. The selected cell is called Active Cell. It is always highlighted, with a thick border. The address of the active cell is displayed in the name box.

Q 22. Name the bar which is located at the top of the LibreOffice Calc window.

Ans. Title bar

Q 23. Define Title bar.

Ans. Title bar shows the name of the current spreadsheet.

Q 24. What is the default name of the first file opened in LibreOffice Calc?

Ans. Untitled 1

Q 25. Write the cell address of the following:

(i) Seventh column and tenth row .....

(ii) Tenth column and nineteenth row .....

Ans. (I) G10

(ii) J19

Q 26. Write the cell address LK89 is situated in row number..... and column letter .....

Ans. 89 and LK

Q 27. Write the shortcut to move the cell to the end of the data range in a particular direction.

Ans. Ctrl + Arrow Keys

Q 28. Write the shortcut to move the cell pointer to A1 position.

Ans. Ctrl + Home

Q 29. Write the shortcut to move the cell pointer to bottom right cell of the data range.

Ans. Ctrl + End

Q 30. What do you mean by Range of cells?

Ans. A block of adjacent cells in a worksheet which is highlighted or selected is called a range of cells. For example, A1 : C3.

Q 31. Identify the range of cells as Row range, Column range, Row and Column range. C9 : J9

Ans. C9 : J9 – – – – – – Row Range

Q 32. Name the two types of data that can be entered in a cell.

Ans. Two types of data that can be entered in a cell are:

(I) Label (II) Values

(iii) Formulae

Q 33. What do you mean by Formula in Calc?

Ans. Any expressions that begins with an equals to sign ('=') is treated as formula. For example =A1 + B1

Q 34. Evaluate the expression = (5*4)^2

Ans. 400

Q 35. Define Label

Ans. If we forgot to put the '=' before the formula, it will be treated as a Label.

? Short Answer Type Questions

Q 1. Write three uses of spreadsheet.

Ans. Spreadsheet is used for:

(I) Managing financial and accounting documents.

(ii) Creating data reports, generating invoices.

(iii) Data analysis from scientific and statistical researches.

Q 2. List any four activities which can be done accurately or efficiently on LibreOffice Calc.

Ans. Four activities are:

(I) Filtering the required data.
(ii) Calculations using formula and functions.
(iii) Check the validity of data.
(Iv) Arranging data in ascending and descending order.

Q 3. Write any four Spreadsheet software.

Ans. Four Spreadsheet software are:

(I) Microsoft Excel
(II) LibreOffice Calc
(iii) OpenOffice Calc
(Iv) Apple Inc. Numbers

Q 4. Name any eight parts of User interface of LibreOffice Calc.

Ans. Eight parts of User Interface of Libre Office Calc are:

(I) Quick Access Tool bar (II) Title bar
(iii) Ribbon (iv) Control Buttons
(v) Name Box (vi) Formula bar
(vii) Formatting Tool bar (viii) Zoom Control
(Ix) Column Heading (x) Row Heading.

Q 5. Name any four items/options available on Menu bar.

Ans. Four items/options available on Menu bar are : (write any four)

(I) File (II) View
(III) Edit (Iv) Format
(v) Insert (vi) Styles

Q 6. Name and explain in brief any two toolbars which provide a wide range of common commands and functions in LibreOffice Calc.

Ans. Two toolbars are:

(I) **Standard Toolbar:** The standard toolbar shows the icons for most common operations, such as editing, arranging, filtering, etc.

(II) **Formatting Toolbar:** It includes buttons for font selection, size of text, alignment, cell value formatting and indentation, etc.

Q 7. Differentiate between Row and Column.

Ans. Differences between Row and Column are:

Row	Column
The horizontal lines in worksheet are called rows.	The vertical lines in worksheet are called columns.
Row headings are represented by numbers like 1, 2, 3, etc.	Column headings are shown by Capital Alphabet like A, B, C, etc.

Q 8. Write the cell address of the following

(I) First row and first column .....
(ii) First column and last row .....
(iii) First row and last column .....
(iv) Last column and first row .....

Ans. (I) A1 (II) A1048576
(iii) AMJ1 (iv) AMJ1

Q 9. Identify the following range of cells as Row range, Column range, Row and Column range.

(i) A1 : A7 (ii) A1 : D1
(iii) A3 : D7 (iv) B4 : B12

Ans. (i) A1 : A7 – – – – – Column Range
(ii) A1 : D1 – – – – – Row Range
(iii) A3 : D7 – – – – – Row and Column Range
(iv) B4 : B12 – – – – – Column Range

Q 10. Evaluate the following equations using operator precedence and then test the result in the spreadsheet.

(i) 1+2^2-2 (ii) 4*3/2

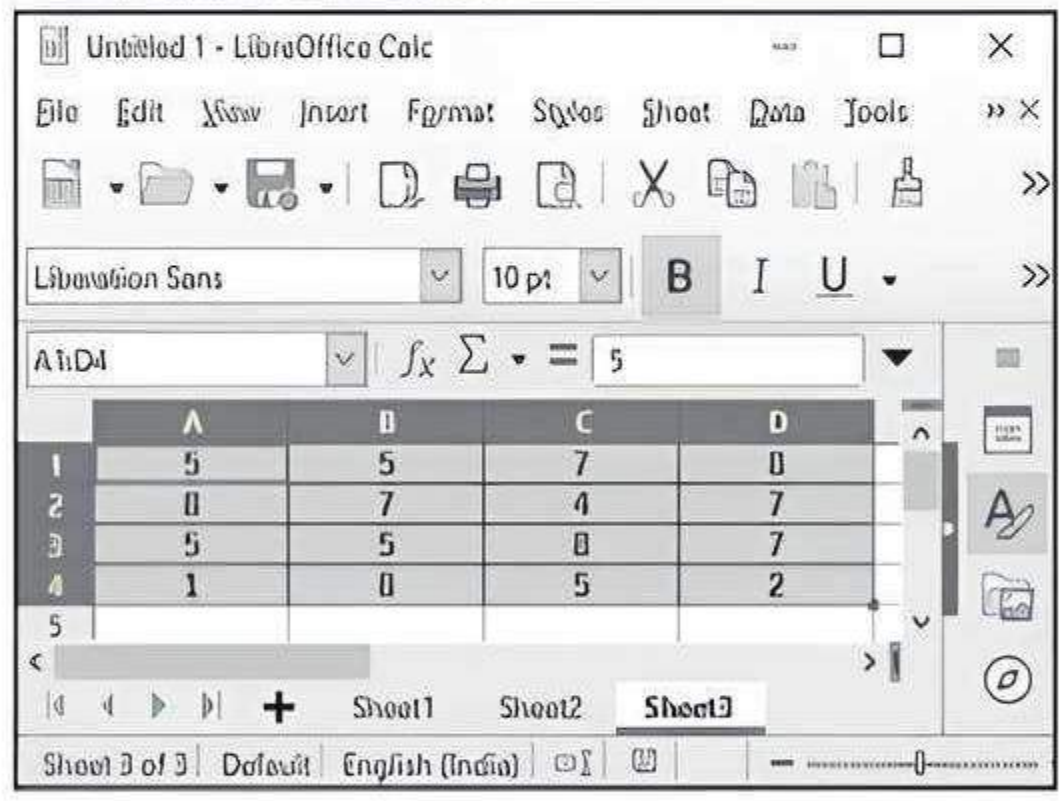
Ans. (I) 3 (II) 6

Q 11. Write the steps to insert a column before any column.

Ans. To insert a column before any column, position the cursor on any cell of the column before which you want to insert the column and select

Sheet → Insert Columns → Columns → Columns left

Q 12. Write the output of the following on the basis of the given screenshot.



(i) =COUNT(A1:A4)
(ii) =COUNT(A1:C1,B2)
(iii) =COUNT(B1:C3)
(iv) =COUNT(A1:A3,C1:C3)

Ans. (I) 3 (ii) 4
(iii) 6 (iv) 6

Q 13. Write the steps to format a cell to the required number of decimal places.

Ans. The steps to format a cell to the required number of decimal places are:

(I) Select the range of cells
(ii) Open the 'format cells dialog' box
(iii) Click the 'Number' tab
(iv) Select the 'Number'
(v) Change the decimal places as required
(vi) Click 'OK'

Q 14. Write the steps to format a range of cells as text.

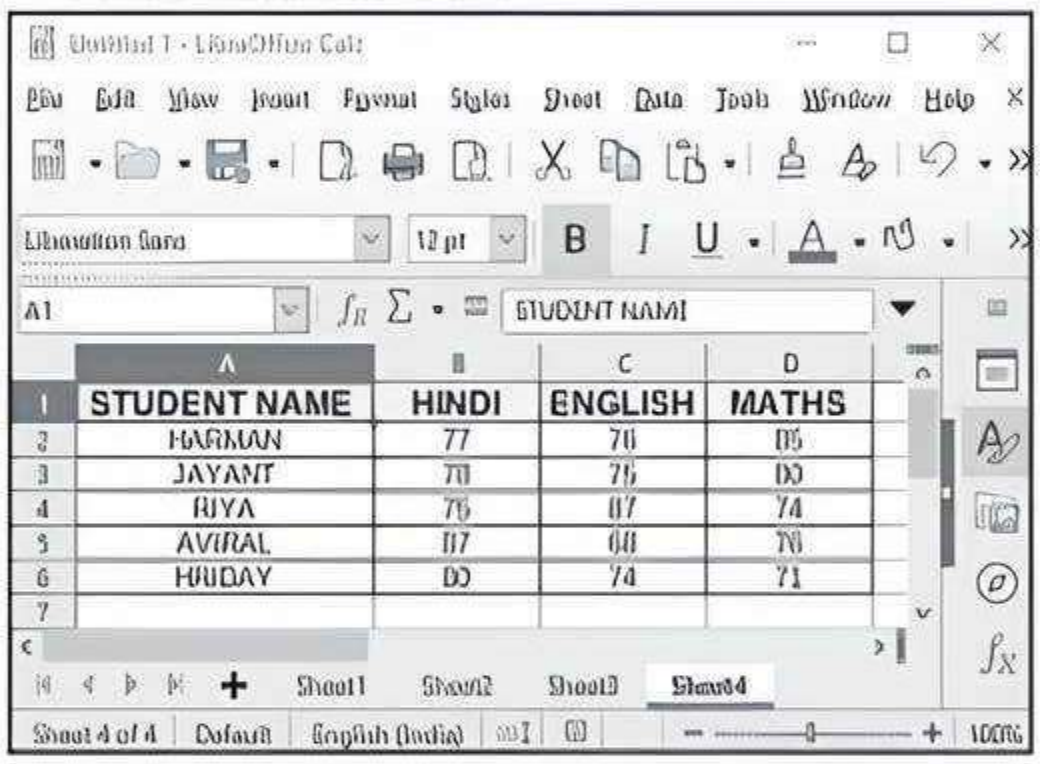
Ans. Steps to format a range of cells as text:

(i) Select the range of cells
(ii) Open the 'format cells dialog' box
(iii) Click the Number tab
(iv) Select Text
(v) Click 'OK'
(vi) Enter numbers

Q 15. Aman is writing telephone number along with STD code (starting from zero '0'). He noticed that the first digit zero ('0'), disappears from the telephone number. Write the reason for this. What can be done to store telephone number starting from zero in a cell?

Ans. This is because the telephone number is stored as a numeric value and the numeric value does not have a preceding zero. We can store telephone number starting from zero in a cell by formatting the cell consisting of telephone number as 'text'.

Q 16. How will you find the lowest score in English and Maths using functions?



Ans. We can find the lowest score in English and Maths by any of the following:

Drag the formula from B9 to D9.

OR

Copy paste the formula from B9 to C9 and D9.

OR

Write formula =min(C2 : C6) in C9 and =min(D2 : D6) in D9.

Q 17. Explain the Relative referencing in Calc with example.

Ans. When you drag any formula in any row or column in any direction, the formula gets copied in the new cell with the relative reference. For example =C1 is an example of relative referencing, as this formula changes automatically when we drag it vertically or horizontally.

Q 18. What do you mean by mixed referencing in Calc?

Ans. In Mixed Referencing, the $ sign is used before row number or column name to make it constant. For example = C$1 is an example of mixed referencing, as this formula changes only when you drag it horizontally.

Q 19. What do you mean by absolute referencing in Calc?

Ans. In Absolute referencing, a $ symbol is used before the column name as well as row number to make it constant in any formula. For example, $C$12, $D$5, etc. In this case, even if you drag your formula in any direction, the cell name remains constant.

Q 20. Identify the types of referencing from the following:

(i) =C1 **(ii) =D$2**
(iii) =$W2 **(iv) =$E$4**

Ans. (i) Relative Referencing
(ii) Mixed Referencing
(iii) Mixed Referencing
(iv) Absolute Referencing

Q 21. Name any four types of charts that can be created in OpenOffice Calc.

Ans. Four types of Charts are:

(i) Bar Chart (ii) Column Chart
(iii) Pie Chart (iv) Line Chart

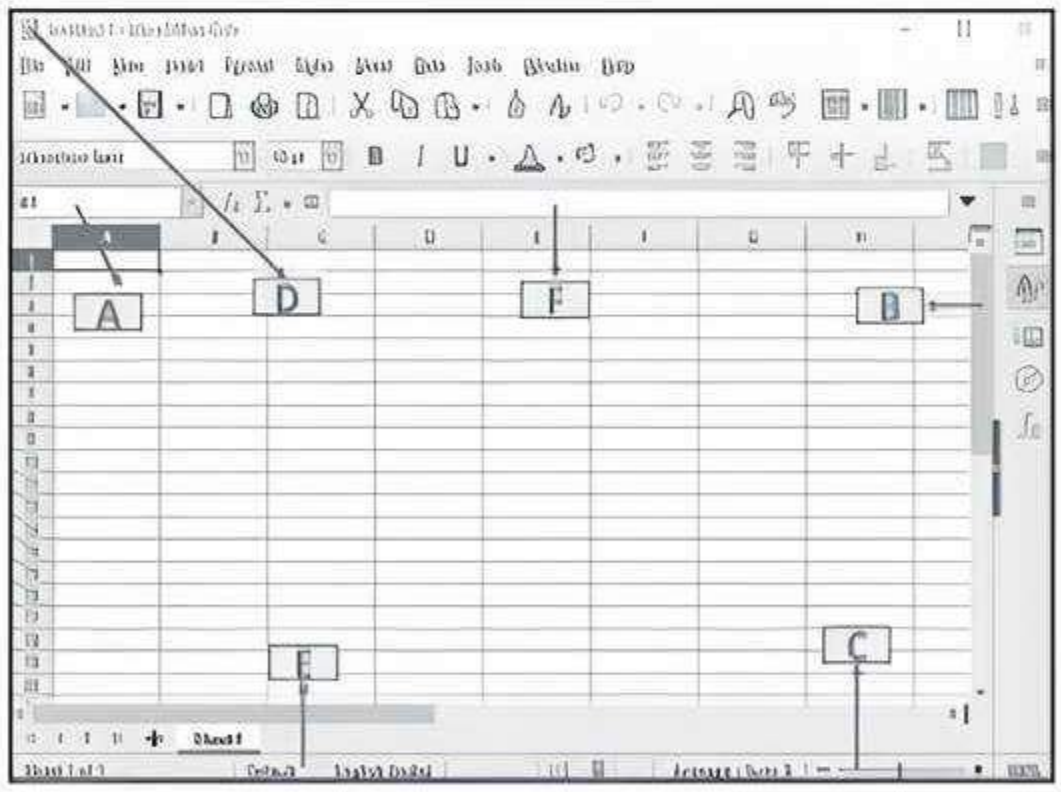
Q 22. Write the steps to create column chart in Calc.

Ans. Steps to create column chart in Calc are:

(i) Select the range of data.
(ii) Click on Insert → Chart
(iii) Select the type of chart
(iv) Select the chart (Column Chart)
(v) Click finish.

? Long Answer Type Questions

Q 1. Identify the following components of LibreOffice Calc Interface.



Ans. Name of Components are:

A – Name Box
B – Vertical Scroll Bar
C – Zoom Control
D – Quick Access Toolbar
E – Status Bar
F – Formula Bar

Q 2. Answer the questions based on the following worksheet.

(i) What is the address of the first cell represented by Range 1?

(ii) **What is the address of the last cell represented by Range 1?**

(iii) **Write the cell range represented by Range 1.**

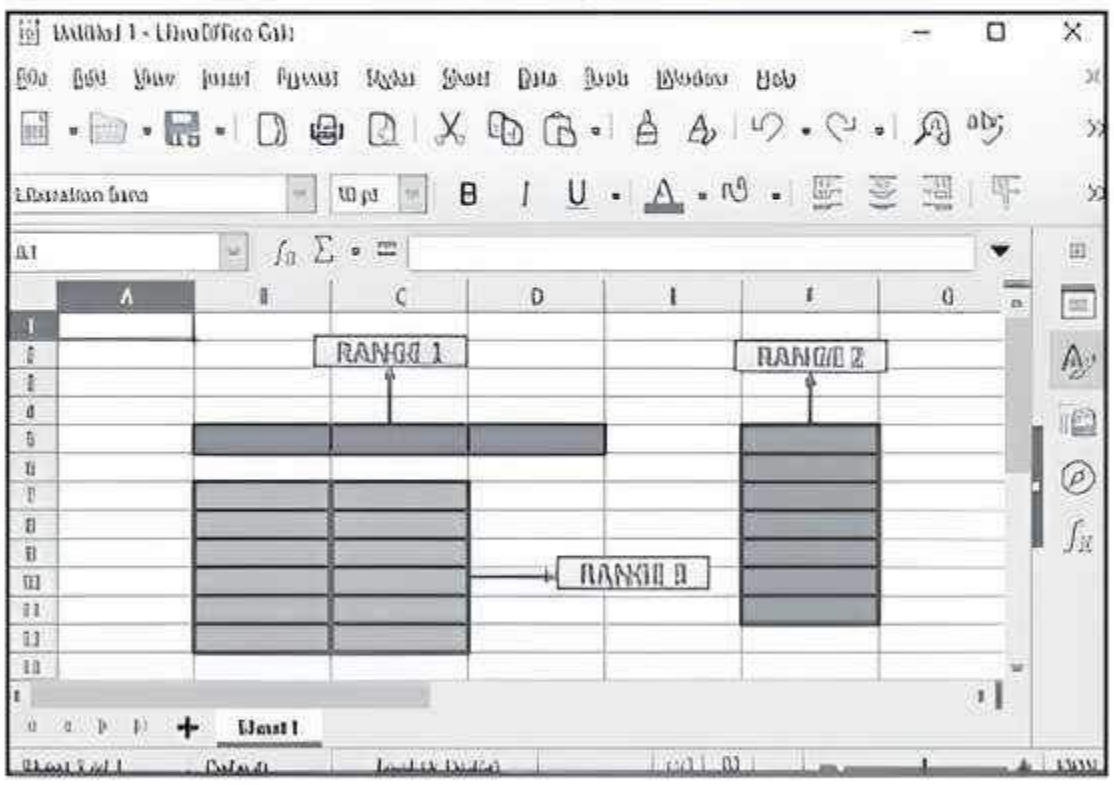
(iv) **Write the cell range represented by Range 2.**

(v) **What is the name of the cell range along a row?**

(vi) **What is the name of the cell range along a column?**

(vii) **Write the cell range represented by Range 3.**

(viii) **Give the number of cells in the cell range represented by Range 3.**



Ans. (i) B5 (ii) D5

(iii) B5 : D5 (iv) F5 : F11

(v) Range 1 (vi) Range 2

(vii) B7 : C12 (viii) 12

Q 3. Evaluate the following equations using operator precedence and then test the result in the spreadsheet (Any 8).

(i) 8-4/2 **(ii) 5*5+8**

(iii) 3+5*4 **(iv) 2^5+8**

(v) 3+2^2 **(vi) 5+6*2^2**

(vii) 8/4*4 **(viii) -4/2+2**

(ix) 1+2^2-2 **(x) 4*3/2**

Ans. (i) 6 (ii) 33

(iii) 23 (iv) 40

(v) 7 (vi) 29

(vii) 8 (viii) 0

(ix) 3 (x) 6

Q 4. Explain the following functions with examples:

(i) sum **(ii) average**

(iii) max **(iv) min**

(v) count

Ans. (i) **Sum:** This function adds the values contained in a range of cells. For example = sum(A1 : A5) will add all the values of cell A1, A2, A3, A4 and A5.

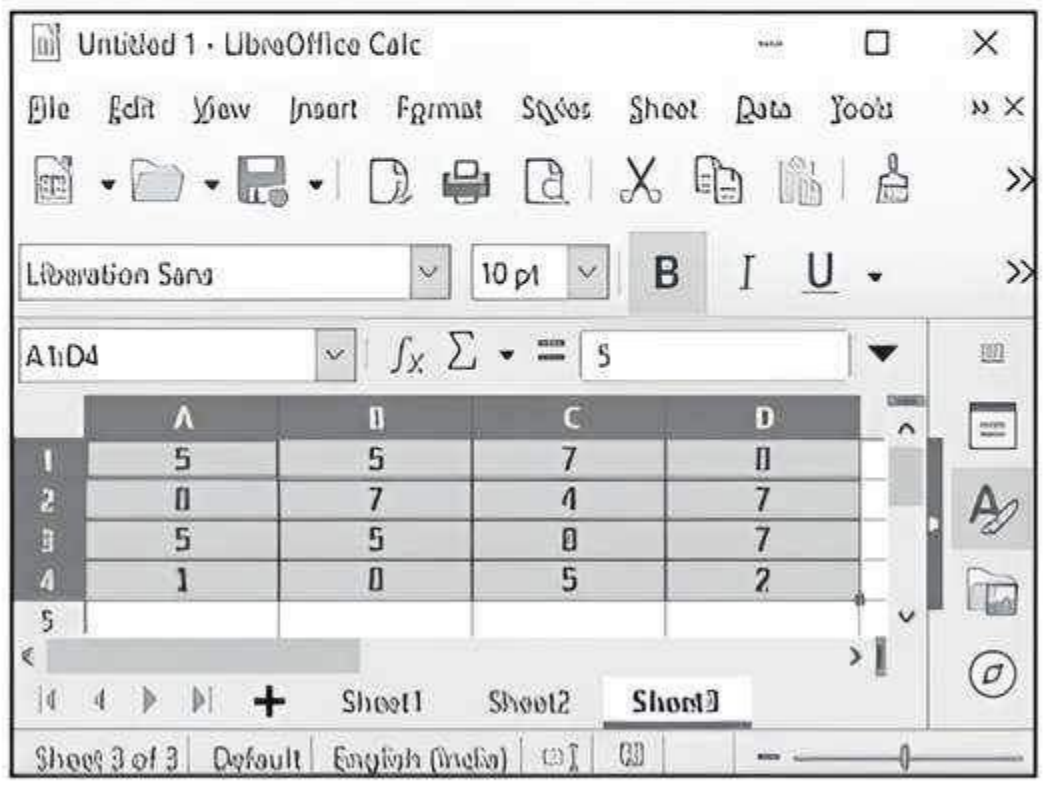
(ii) **Average:** This function finds out the average of the values contained in a range of cell. For example =average(A1 : A5) will return the average of values present in cell A1, A2, A3, A4 and A5.

(iii) **Max:** This function return the largest value contained in a range of cells. For example =max(A1 : A5) will return the largest value present in cell A1, A2, A3, A4 and A5.

(iv) **Min:** This function return the smallest value contained in a range of cells. For example =min(A1 : A5) will return the smallest value present in cell A1, A2, A3, A4 and A5.

(v) **Count:** This function counts the number of non-empty cells within a range of cells. For example =count(A1 : A5) will return 5, if all cells contain some any value.

Q 5. Write the output of the following on the basis of the given screenshot (Any four).



	A	B	C	D
1	5	5	7	0
2	0	7	4	7
3	5	5	0	7
4	1	0	5	2
5				

(i) =SUM (A1,B1,C1)

(ii) =SUM(A1:C1)

(iii) =SUM(A1:C1,B2)

(iv) =SUM(B1:C2)

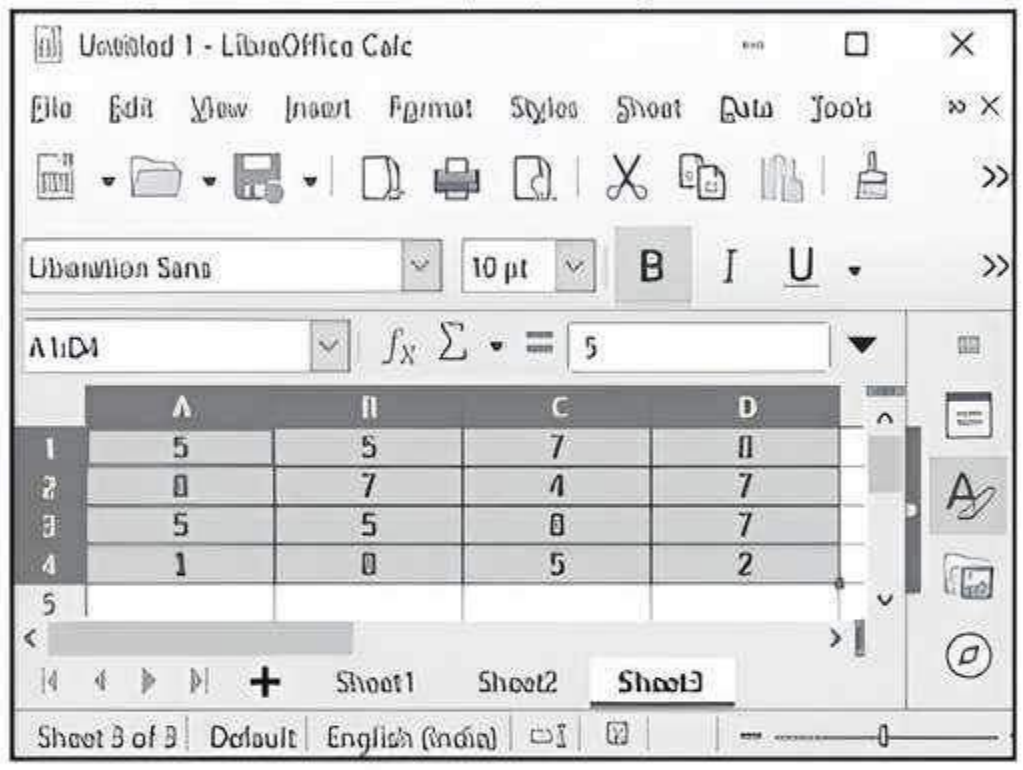
(v) =SUM(A1:A3,C1:C3)

Ans. (i) 17 (ii) 17

(iii) 24 (iv) 23

(v) 37

Q 6. Write the output of the following on the basis of the given screenshot (Any four).



	A	B	C	D
1	5	5	7	0
2	0	7	4	7
3	5	5	0	7
4	1	0	5	2
5				

(i) =AVERAGE (A1,B1,C1)

(ii) =AVERAGE (A1:C1)

(iii) =AVERAGE (A1:C1,B2)

(iv) =AVERAGE (B1:C2)

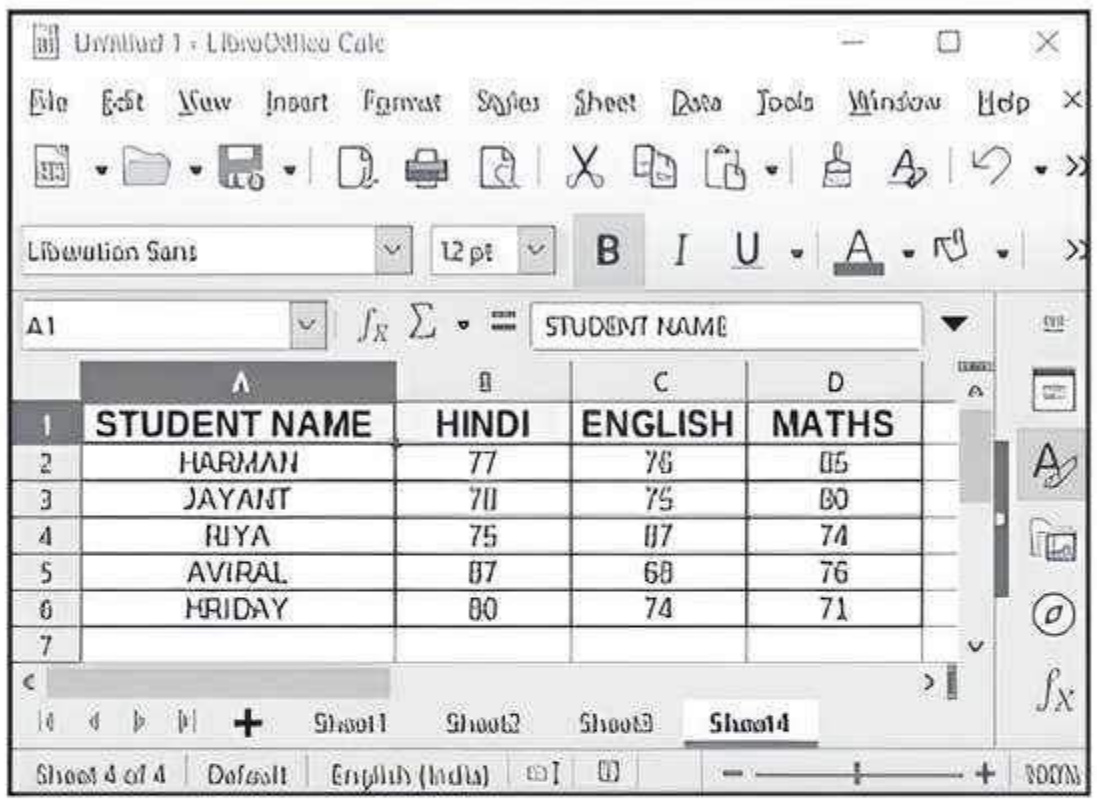
(v) =AVERAGE (A1:A3,C1:C3)

Ans. (i) 5.66 (ii) 5.66

(iii) 6.33 (iv) 5.75

(v) 6.16

Q 7. Write answers for the following queries using functions (Any four).



	A	B	C	D
1	STUDENT NAME	HINDI	ENGLISH	MATHS
2	HARMAN	77	76	85
3	JAYANT	70	75	80
4	RIYA	75	87	74
5	AVIRAL	87	68	76
6	HRIDAY	80	74	71
7				

(i) Write the formula in E2 to find the total marks scored by HARMAN.

(ii) Write the formula in F2 to find the average marks scored by HARMAN.

(iii) Write the formula in cell B7 to find the highest score in Hindi.

(iv) Write the formula in cell B8 to find the total number of students who appeared in Hindi?

(v) Write the formula in cell B9 to find the lowest score in Hindi.

Ans. (i) =sum(B2 : D2)

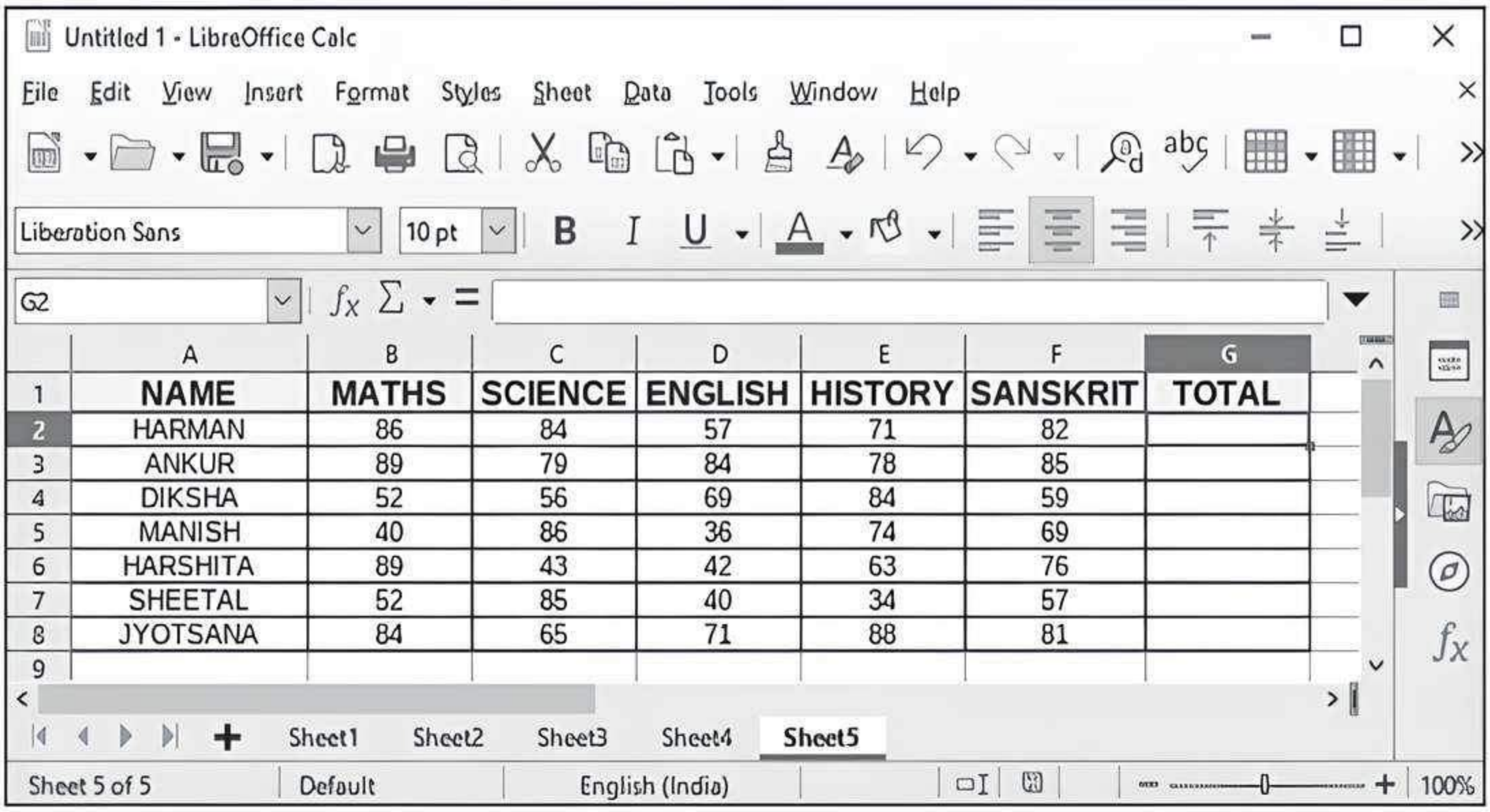
(ii) =average(B2 : D2)

(iii) =max(B2 : B6)

(iv) =count(B2 : B6)

(v) =min(B2 : B6)

Q 8. Create the following worksheet in calc and write the formula for the task given below (Any four).



	A	B	C	D	E	F	G
1	NAME	MATHS	SCIENCE	ENGLISH	HISTORY	SANSKRIT	TOTAL
2	HARMAN	86	84	57	71	82	
3	ANKUR	89	79	84	78	85	
4	DIKSHA	52	56	69	84	59	
5	MANISH	40	86	36	74	69	
6	HARSHITA	89	43	42	63	76	
7	SHEETAL	52	85	40	34	57	
8	JYOTSANA	84	65	71	88	81	
9							

(i) Enter the formula in G2 to calculate the total marks scored by Harman.

(ii) Enter the formula in H2 to calculate the average scored by Harman.

(iii) Enter the formula in B9 to find out the highest score obtained for science.

(iv) Enter the formula in B10 to find out the lowest score obtained by students in each subject.

(v) Enter the formula in B11 to find out the number of students present for each subject.

(vi) Enter the formula in B12 to find out the average score of each subject.

Ans. (i) =sum(B2 : F2)

(ii) =average(B2 : F2)

(iii) =max(C2 : C8)

(iv) Write formula =min(B2 : B8) in B10 and then drag horizontally till F10.

(v) Write formula =count(B2 : B8) in B11 and then drag horizontally till F11.

(vi) Write formula =average(B2 : B8) in B12 and then drag horizontally till F12.

Q 9. Create the following worksheet in calc and write the formula for the task given below (Any eight).

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans | 11 pt | B I U

A1 | S. NO.

	A	B	C	D	E	F	G	H
1	S. NO.	NAME	BASIC SALARY	TA(6%)	DA(14%)	HRA(10%)	CPF(3%)	GROSS SALARY
2	1	AMIT SHARMA	12000					
3	2	DEEPAK GAUTAM	9000					
4	3	CHETNA AGARWAL	15000					
5	4	FIROZ KHAN	8500					
6	5	GAGAN TOMAR	15600					
7	6	MEENA KUMARI	9800					
8	7	NIKKI KHANNA	16500					
9	8	TEJPAL SINGH	14600					
10	9	VINAY KUMAR	14900					
11	10	YUSUF PATHAN	12800					
12								

Sheet1 Sheet2 Sheet3 Sheet4 Sheet5 Sheet6 Sheet7

Sheet 7 of 7 | Default | English (India) | Average: ; Sum: 0 | 100%

(i) Write formula in D5 to calculate TA of Firoz Khan.

(ii) Write formula in E3 to calculate DA of Deepak Gautam.

(iii) Write formula in F8 to calculate HRA of Nikki Khanna.

(iv) Write formula in G7 to calculate CPF of Meena Kumari.

(v) Write formula in C12 to display the highest Basic salary.

Ans. (i) = 6/100 * C5 (ii) = 14/100 * C3

(iii) = 10/100 * C8 (iv) = 3/100 * C7

(v) = max (C2 : C11)

Q 10. Create the following worksheet in calc and write the formula for the task given below (Any four).

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans | 12 pt | B I U

A1 | S. NO.

	A	B	C	D	E	F	G
1	S. NO.	NAME	HINDI	ENGLISH	SCIENCE	MATHS	BIOLOGY
2	1	AMIT	65	84	33	30	69
3	2	DEEPAK	31	41	87	57	35
4	3	CHETNA	77	48	72	35	65
5	4	FIROZ	76	79	33	73	76
6	5	GAGAN	41	93	52	87	29
7	6	MEENA	90	84	92	43	54
8	7	NIKKI	30	90	39	44	59
9	8	TEJPAL	93	74	42	84	48
10	9	VINAY	62	81	74	93	86
11	10	YUSUF	27	27	28	61	48
12							

Sheet1 Sheet2 Sheet3 Sheet4 Sheet5 Sheet6

Sheet 6 of 6 | Default | English (India) | Average: ; Sum: 0 | 100%

(i) Write formula in H2 to calculate total marks of Amit.

(ii) Write formula in C12 to calculate minimum marks in Hindi.

(iii) Write formula in H6 to display lowest marks of Gagan.

(iv) Write the cell range which has marks of Nikki (of all subjects).

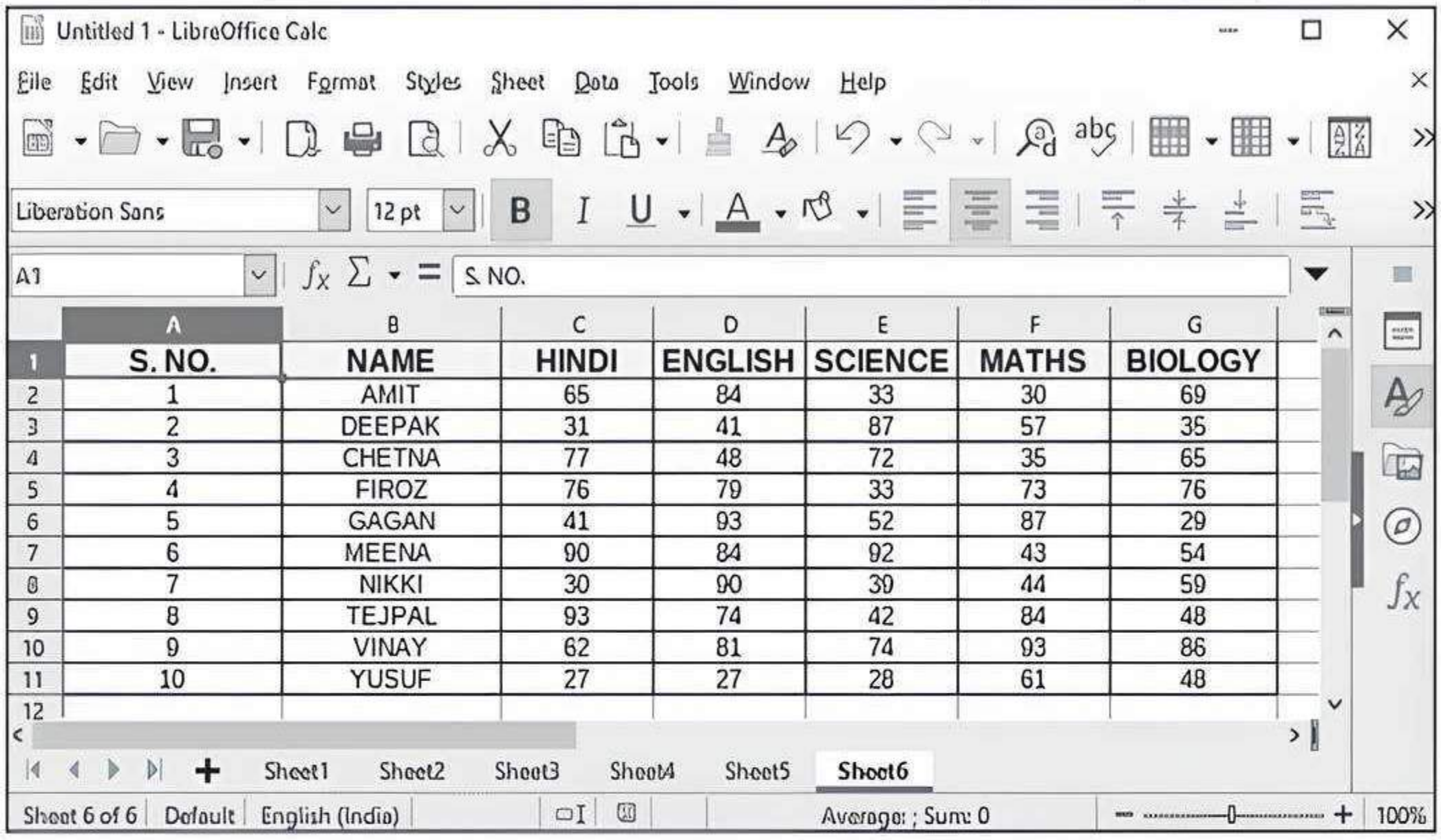
(v) Write formula in H7 to calculate percentage of Meena.(Assume all marks are out of 100)

Ans. (i) = sum (C2 : G2) (ii) = min (C2 : C11)

(iii) = min (C6 : G6) (iv) Cell range is C8 : G8

(v) = sum (C7 : G7)/500 * 100

Q 11. Create the following worksheet in calc and write the formula for the task given below (Any four).



	A	B	C	D	E	F	G
1	S. NO.	NAME	HINDI	ENGLISH	SCIENCE	MATHS	BIOLOGY
2	1	AMIT	65	84	33	30	69
3	2	DEEPAK	31	41	87	57	35
4	3	CHETNA	77	48	72	35	65
5	4	FIROZ	76	79	33	73	76
6	5	GAGAN	41	93	52	87	29
7	6	MEENA	90	84	92	43	54
8	7	NIKKI	30	90	39	44	59
9	8	TEJPAL	93	74	42	84	48
10	9	VINAY	62	81	74	93	86
11	10	YUSUF	27	27	28	61	48
12							

(i) Write formula in B12 to calculate total number of students.

(ii) Write formula in H9 to calculate the 10% of total marks of Tejpal.

(iii) Write formula in I12 to calculate average marks of Science subject.

(iv) Write formula in H2 to calculate total marks of subject English, Maths and Biology of Amit.

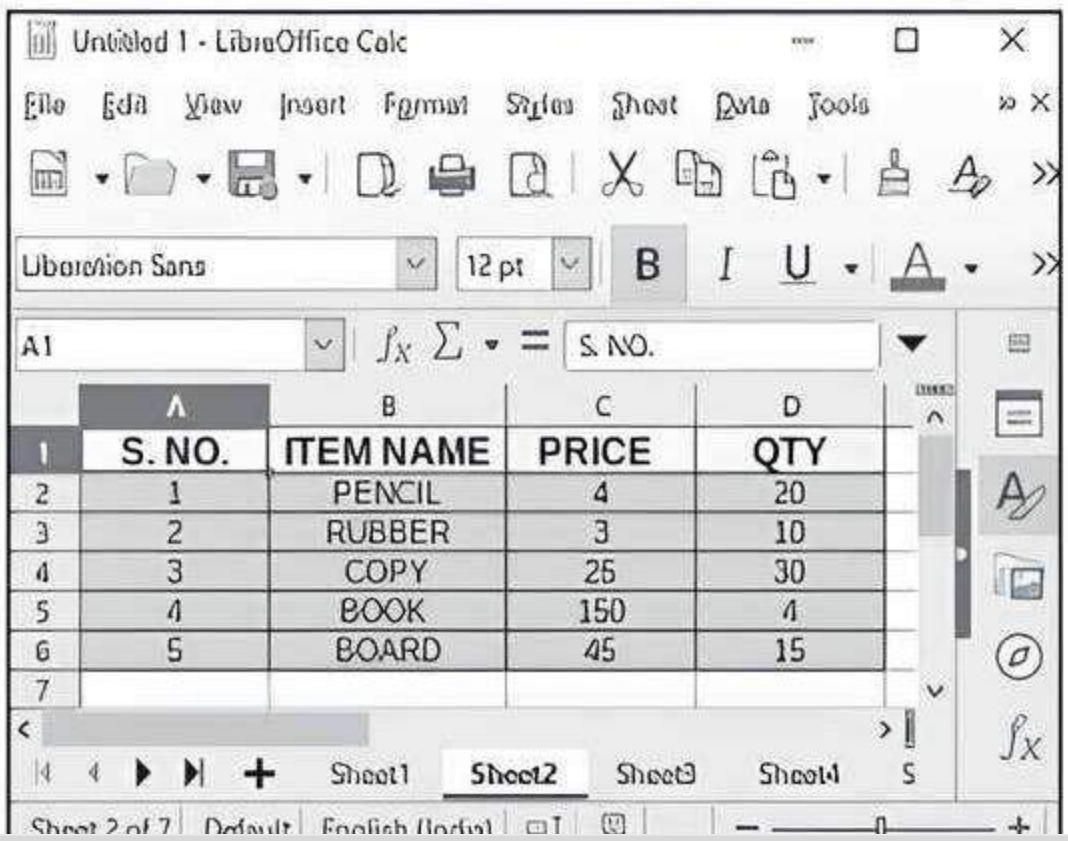
(v) Write formula in H4 to calculate the average of best three marks of Chetna.

Ans. (i) = count (B2 : B11) (ii) = (C9 + D9 + E9 + F9 + G9) * 10/100

(iii) = average (E2 : E11) (iv) = D2 + F2 + G2

(v) = average(C4 + D4 + G4)

Q 12. Create the following worksheet in calc and write the formula for the task given below (Any Eight).



	A	B	C	D
1	S. NO.	ITEM NAME	PRICE	QTY
2	1	PENCIL	4	20
3	2	RUBBER	3	10
4	3	COPY	25	30
5	4	BOOK	150	4
6	5	BOARD	45	15
7				

(i) Write formula in E2 to calculate the Total price (Quantity * Price) of Pencil.
(ii) Write formula in C7 to calculate total of Price values.
(iii) Write formula in D7 to calculate maximum value of column 'QTY'.
(iv) Write formula in C8 to calculate average of Price values.
(v) Write formula in C9 to find lowest value of column 'PRICE'.
(vi) = C4 * D4 will return .....
(vii) Write the cell range of all the numerical values of column 'QTY'.
(viii) Write the cell address which stores largest/maximum value of column 'PRICE'.
(ix) How many values are stored in range C2 : D6?

Ans. (i) = C2 * D2 (ii) =sum (C2 : C6) (iii) = max (D2 : D6)
(iv) = average (C2 : C6) (v) = min (C2 : C6) (vi) 750
(vii) D2 : D6 (viii) C5 (ix) 10

CHAPTER TEST

Multiple Choice Questions

Q 1. Rename sheet option is available in ..... menu.
a. File b. Edit
c. Format d. Sheet

Q 2. Extension of LibreOffice Calc file is .....
a. .ods b. .xls
c. .odx d. None of these

Q 3. To insert the column before any column select .....
a. Sheet → Insert Columns → Columns left
b. Sheet → Insert Columns → Columns right
c. Sheet → Insert Columns → Columns
d. None of the above

Q 4. Evaluate the following expression, if cell A1, B1 and C1 has values 10, 20 and 30 respectively.
=A1 * B1 - C1
a. 170 b. 100
c. -170 d. None of these

Q 5. Evaluate the following expression, if cell A1, B2, C2 and D3 has values 10, 2, 3, 36.
=(D3/(A1+B2))^C2
a. 64 b. 216
c. 27 d. 125

Q 6. ..... is the function in LibreOffice Calc to get the sum of range of cells.
a. ADD( ) b. SUM( )
c. Both a. and b. d. None of these

Q 7. Which of the following will return the sum of Cell A1 to E1.
a. =SUM(A1 : E1)
b. =(A1 + B1 + C1 + D1 + E1)
c. =SUM(A1,B1,C1,D1,E1)
d. All of these

Q 8. Which of the following function calculate the average in LibreOffice Calc?
a. AVG( )
b. AVERAGE( )
c. Both a. and b.
d. None of these

Fill in the Blanks

Q 9. Numbers entered into a cell are automatically ..... aligned.

Q 10. If A1:A5 contain the numbers 16, 10, 3, 25 and 6 then = Average(A1:A5;60) will display .....

Q 11. In ..... referencing, the reference changes rows and columns automatically when it is copied to a new cell.

Assertion-Reason Type Questions

Directions (Q. Nos. 12-13): *In the questions given below, there are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the correct option.*

a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not correct explanation of Assertion (A).
c. Assertion (A) is true, but Reason (R) is false.
d. Assertion (A) is false, but Reason (R) is true.

Q 12. Assertion (A): Spreadsheet software is utilised for manipulation of data and creation of workbook files comprising one/more related worksheets.
Reason (R): Cell Reference is used for identifying a cell or a range of cells, in a worksheet. References help to look for the values which are to be used in a formula in different parts of a worksheet.

Q 13. Assertion (A): Functions are used to carry out calculations that involve basic arithmetic operations such as addition, multiplication, subtraction and division.
Reason (R): The Title bar displays the sheet information as well as the insertion point location.

Case Study Based Questions

Q 14. The Spreadsheet Operators perform actions on numeric values, text or cell references. There are four different types of Spreadsheet Operators. These are: Arithmetic Operators, Text Operator, Comparison Operators and Reference Operators. To perform basic mathematical operations such as addition, subtraction, or multiplication, combine numbers or produce numeric results, use the arithmetic operators. The Comparison Operators are used when defining conditions. The Reference Operators are used when referring to ranges within a spreadsheet.

A formula is an expression that operates on values in a range of cells or a cell. Functions are pre-defined formulas in spreadsheet. They eliminate laborious manual entry of formulas while giving them human-friendly names.

(i) Which operator in the given expression has the highest priority?

=5+6*2^2

a. + b. -

c. * d. None of these

(ii) Which of the following operator has the highest priority?

a. ( ) b. ^ c. - d. +

(iii) If we forgot to put the '=' before the formula, it will be treated as a .....

a. Value b. Function

c. Label d. None of these

(iv) When we enter an equal sign ('=') in any cell, then ..... bar gets activated automatically.

a. Formula b. Formatting

c. Menu d. None of these

(v) Which of the following is a valid way of writing formula?

a. F2 = B1 + C1 b. =B1 + C1

c. Both a. and b. d. None of these

Q 15. Calc is a spreadsheet program used to record and analyse numerical and statistical data. LibreOffice Calc provides multiple features to perform various operations like calculations, pivot tables, graph tools, macro programming, etc. It is compatible with multiple OS like Windows, macOS, Android and iOS.

A Calc spreadsheet can be understood as a collection of columns and rows that form a table. Alphabetical letters are usually assigned to columns and numbers are usually assigned to rows. The point where a column and a row meet is called a cell. The address of a cell is given by the letter representing the column and the number representing a row.

(i) What do you mean by LibreOffice Calc?

(ii) What is the use of ODD() function?

(iii) What is the purpose of the Quick Access toolbar in Calc?

(iv) What is the use of IF function?

(v) What are Arguments?

Very Short Answer Type Questions

Q 16. What do you mean by Function in Calc?

Q 17. Write the shortcut to open Format cell dialog box.

Q 18. What is fill handle in Calc?

Q 19. Write the shortcut for the following:

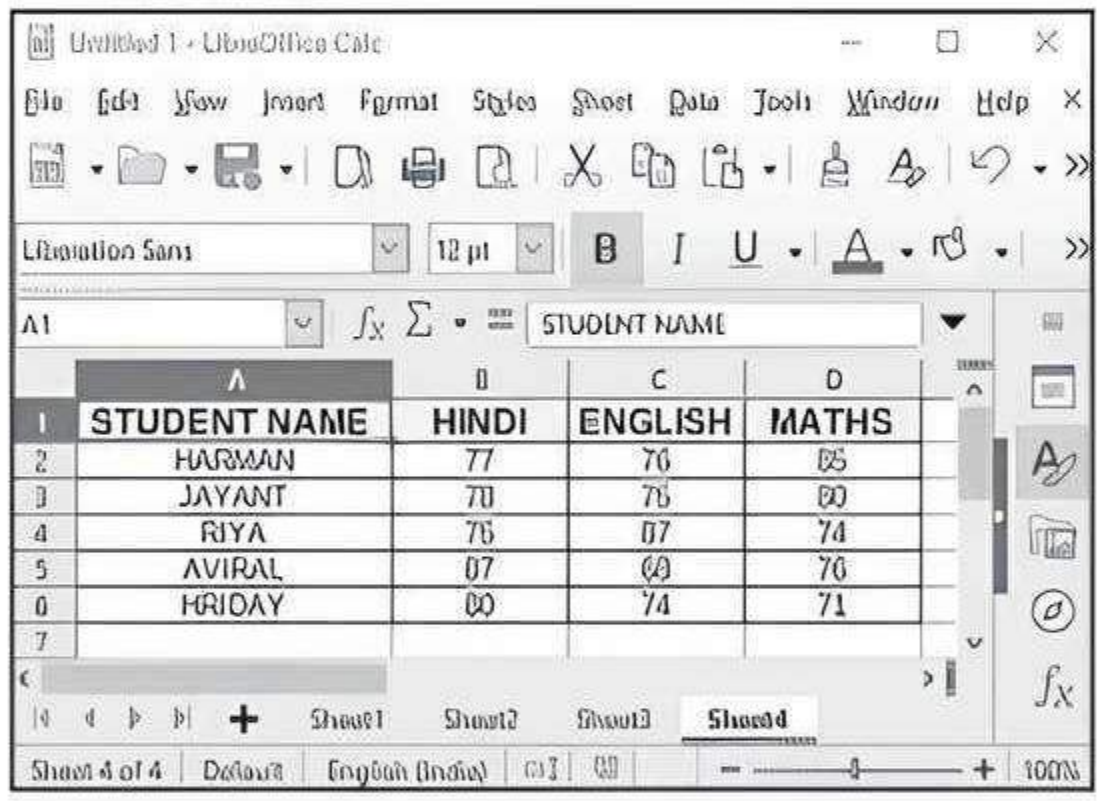
1. Copy the formula
2. Paste the formula

Q 20. What do you mean by Referencing in Calc?

Q 21. Name the three types of referencing in Calc.

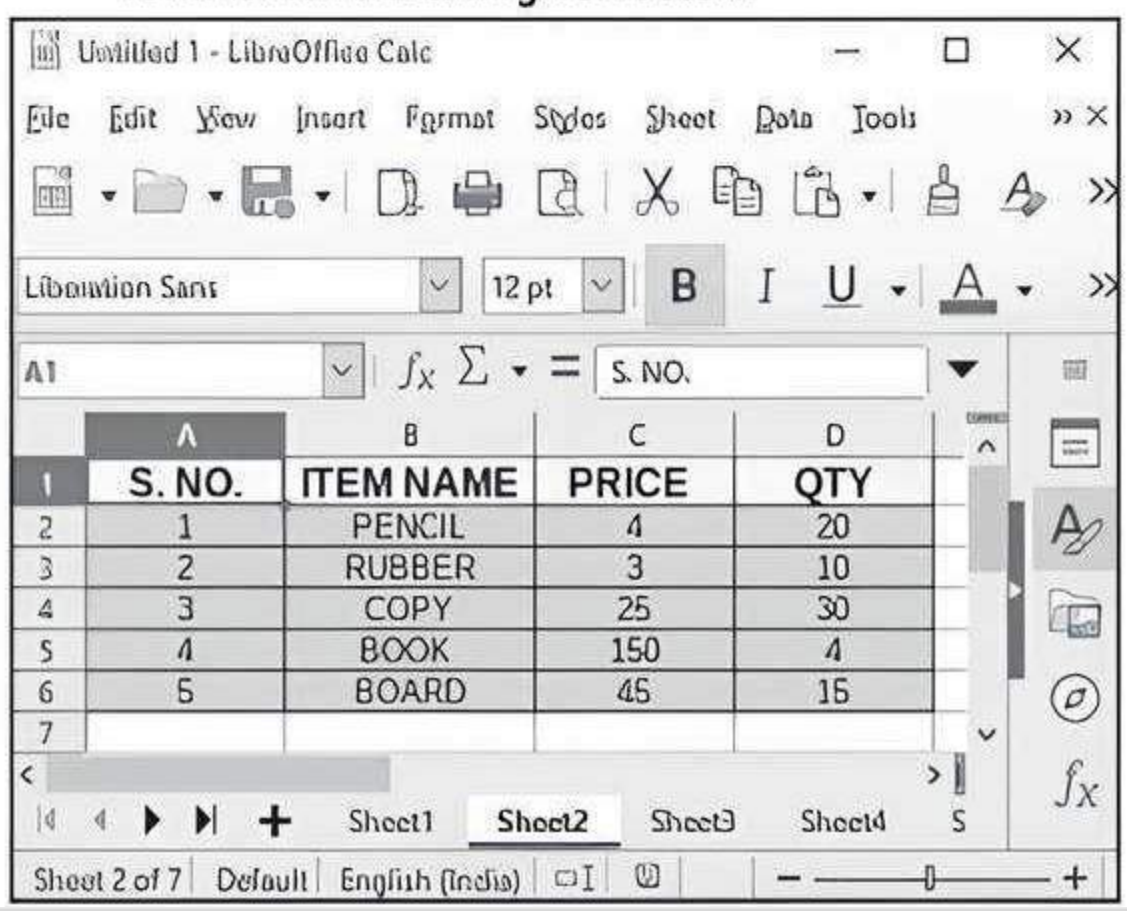
Short Answer Type Questions

Q 22. How will you find the highest score in Hindi, English and Maths?



Q 23. Name and explain the three types of data that can be entered in a cell.

Q 24. Create the following worksheet in calc and write the formula for the task given below.



(i) = C4 * D4 will return .....

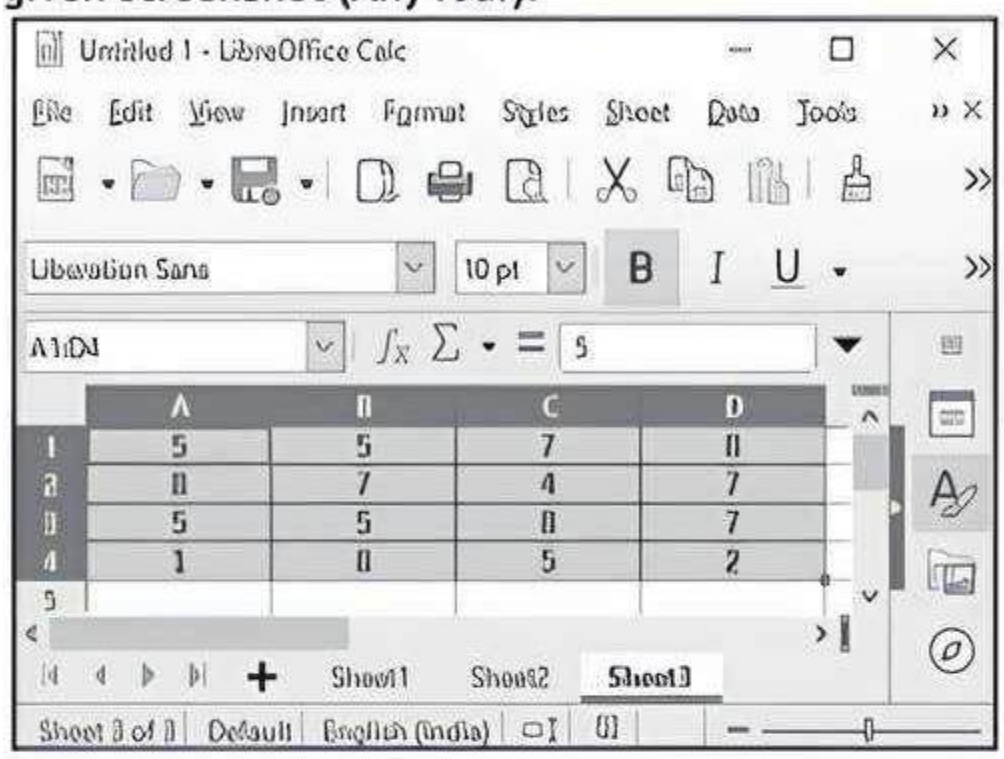
(ii) Write the cell range of all the numerical values of column 'QTY'.

(iii) Write the cell address which stores largest/ maximum value of column 'PRICE'.

(iv) How many values are stored in range C2 : D6?

Long Answer Type Questions

Q 25. Write the output of the following on the basis of the given screenshot (Any four).



	A	B	C	D
1	5	5	7	8
2	8	7	4	7
3	5	5	8	7
4	1	8	5	2
5				

(i) = MAX(A1,B2,C1)

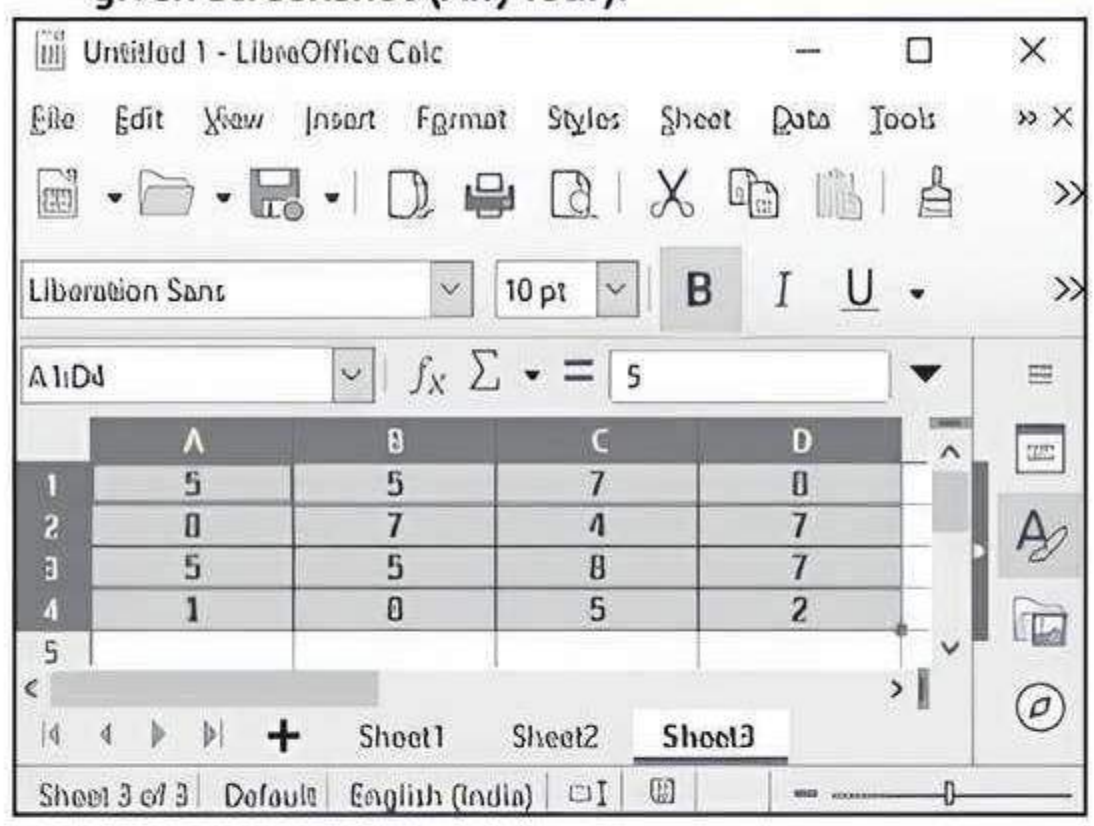
(ii) = MAX(A2:C2,B3)

(iii) =MAX(A1:C1)

(iv) =MAX(A1,B1:C2)

(v) =MIN(A1,B2,C1)

Q 26. Write the output of the following on the basis of the given screenshot (Any four).



	A	B	C	D
1	5	5	7	8
2	8	7	4	7
3	5	5	8	7
4	1	8	5	2
5				

(i) = MIN(A2:C2,B3)

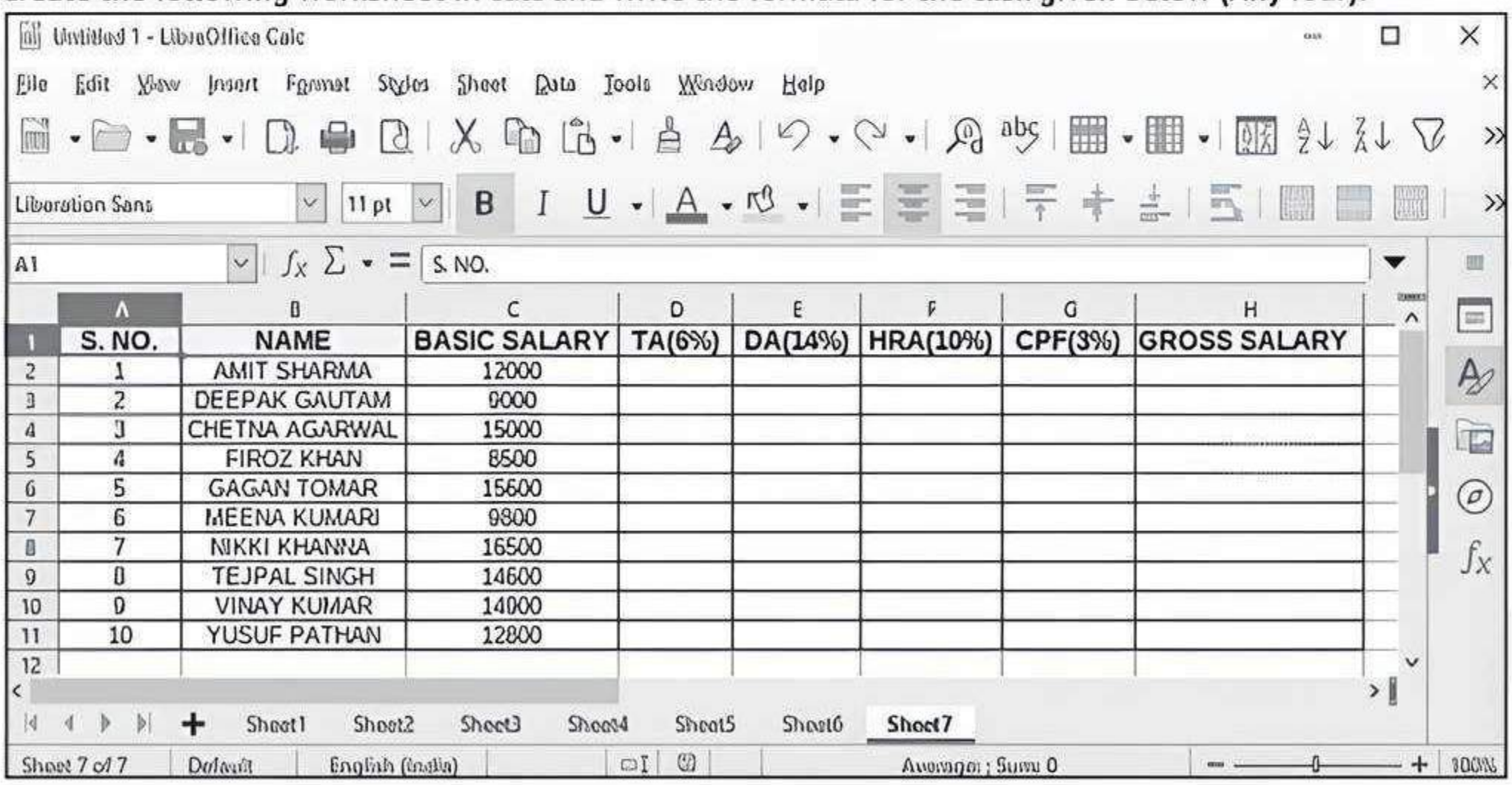
(ii) = MIN(A1:C1)

(iii) = MIN(A1,B1:C2)

(iv) = COUNT(A1,B1)

(v) = COUNT(A1:C1)

Q 27. Create the following worksheet in calc and write the formula for the task given below (Any four).



	A	B	C	D	E	F	G	H
1	S. NO.	NAME	BASIC SALARY	TA(6%)	DA(14%)	HRA(10%)	CPF(3%)	GROSS SALARY
2	1	AMIT SHARMA	12000					
3	2	DEEPAK GAUTAM	9000					
4	3	CHETNA AGARWAL	15000					
5	4	FIROZ KHAN	8500					
6	5	GAGAN TOMAR	15600					
7	6	MEENA KUMARI	9800					
8	7	NIKKI KHANNA	16500					
9	8	TEJPAL SINGH	14600					
10	9	VINAY KUMAR	14000					
11	10	YUSUF PATHAN	12800					
12								

(i) Write formula in I10 to calculate the gross salary of Vinay Kumar.

(ii) Write formula in H12 to calculate the average of Gross Salary of all employees.

(iii) Write formula in B12 to display the total number of employees.

(iv) Write formula in I11 to calculate average of TA, DA and HRA of Yusuf.

(v) Write formula in C13 to calculate the sum of Basic Salary of all employees.