Chapter 8: Spreadsheet Tool — OpenOffice Calc

Assignment Solutions

Multiple-Choice Questions (MCQs)

1. Which of the following is a combination of cells, rows and columns?

a. Worksheet b. Cell
c. Formula d. Function

Ans. a

2. Which of the following allows you to add duplicate entries or fill data series in the cells of a worksheet?

a. Full handle b. Fill handle
c. Data handle d. Series handle

Ans. b

3. Which of the following is an extension of the OpenOffice Calc?

a. .dos b. .sod
c. .ods d. .calc

Ans. c

4. Which one of the following functions is used to calculate the average of a specified range?

a. MAX() b. SUM()
c. AVERAGE() d. MIN()

Ans. a

5. Doughnut is a type of ..... chart.

a. Bar b. Column
c. Line d. Pie

Ans. d

6. Which chart is used to show the comparison of data items within a specified time period?

a. area chart b. Column
c. Line d. Pie

Ans. b

7. In which step, do you need to enter the values of Title, Subtitle, X-axis and Y-axis?

a. Chart Type b. Chart Elements
c. Data Series d. Data Range

Ans. b

Very Short Answer Questions

8. The intersection of a row and a column is called .....

Ans. Cell

9. In a cell address, F18:

F refers to .....

18 refers to .....

Ans. Column, row

10. Give one difference between bubble chart and pie chart.

Ans. A pie chart demonstrates the proportional size of an item with respect to the sum of all the items, whereas a bubble chart is used for representing relations among three variables.

Short Answer Questions

11. Which key combination is used to select an entire worksheet?

Ans. The Ctrl+A key combination is used to select the entire worksheet.

12. Which key combination allows you to select the current column completely (all rows in the current column)?

Ans. The Ctrl+Shift+Spacebar key combination allows you to select the current column completely (all rows in the current column).

13. Which key combination allows you to select all the columns in the current row?

Ans. The Shift+Spacebar key combination allows you to select all the columns in the current row.

14. List the difference between a column and a bar chart.

Ans. A column chart is used to emphasize comparison of data items within a specified time period. To highlight the changes within a specified time period, the column chart organizes the values vertically and categories horizontally. On the contrary, a bar chart is used to demonstrate comparison among individual items. It is mainly used to highlight a comparison of values. Therefore, it organizes values horizontally and categories vertically.

15. Define the stock chart and list its two characteristics.

Ans. The stock chart is used to demonstrate the market movement in terms of the opening price, bottom price, top price, and closing price. It also displays the transaction volume.

The following are some of the characteristics of the stock chart:

- The stock chart uses the lines with markers to show the data series.
- The height of the marker helps you to measure the value.

Long Answer Questions

16. List any three functions along with their functionalities.

Ans. The three functions along with their functionalities are as follows:

1. **SUM():** It is used to add all the numbers in a range of cells, and the result is displayed in the active cell containing the formula.
2. **AVERAGE():** The AVERAGE() function is used to get the average (arithmetic mean) of all the passing arguments.
3. **COUNT():** The COUNT() function is used to count the cells that contain numbers.

17. Describe different ways of cell referencing in Calc.

Ans. Cell referencing is the method by which you refer to a cell or series of cells in a formula. Cell references are an important part of creating formulas in a spreadsheet program. Using cell references allows your formulas to update automatically if the value in a particular cell changes and can also assist you in updating formulas as cells are copied or moved. Cell referencing is of three types:

1. **Relative cell referencing:** In relative cell referencing, when a formula is copied to a new location in a worksheet, cell references in the formula change in relation to the new location of the formula.
2. **Absolute cell referencing:** In absolute cell referencing, cell references in a formula remain the same even when the formula is copied to a new location. For absolute cell referencing, you need to use the $ (dollar) symbol as a prefix before the column and row names in a formula.
3. **Mixed cell referencing:** You have already learnt that a cell address has two parts— first is the column letter and second is the row number. If you put the $ sign before both these parts (row number and column letter), the cell address becomes an absolute cell reference. When you do not put the $ sign before any of the parts, the cell address remains a relative cell reference. However, if you use the $ symbol with only one part of the cell address, either with the column letter or the row number, it is called the mixed cell referencing. In mixed cell referencing, one part of the cell address is an absolute reference while the other part is a relative reference.

18. How copying a range is different from moving a range?

Ans. Copying a range means copying the desired content in the spreadsheet and pasting it at the required location in the same spreadsheet. When we copy a range, the data remains available at its original location. On the other hand, moving a range means moving the data from its original location and placing it at a new location. In other words, the data is no more present at its original place.

19. What is the difference between absolute referencing and relative referencing?

Ans. In absolute cell referencing, cell references in a formula remain the same even when the formula is copied to a new location. On the other hand, in relative cell referencing, when a formula is copied to a new location in a worksheet, cell references in the formula change in relation to the new location of the formula. In addition, if you put the $ sign before both these parts (row number and column letter), the cell address becomes an absolute cell reference. When you do not put the $ sign before any of the parts, the cell address remains a relative cell reference.

20. What do you understand by an argument?

Ans. Arguments refer to the values or cell references that are passed to a function. The arguments are passed within the parentheses used in functions. The argument can be of any type, such as numbers, text, and Boolean values, such as true or false. In addition, you can also pass formulas or other functions as arguments.

21. What is the procedure to clear the content of a worksheet?

Ans. Perform the following steps to clear a worksheet:

1. *Select* a worksheet by clicking the Select All button or by pressing Ctrl+A keys, as shown in Figure 1:

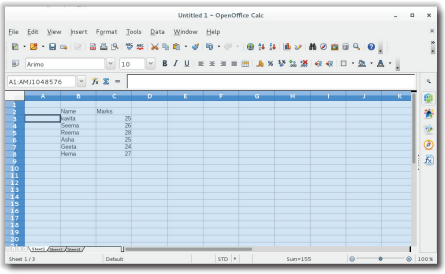

Figure 1: Selecting a Worksheet

2. *Press* the Delete key on the keyboard. The Delete Contents dialog box appears (Figure 2).
3. *Select* the Delete all option (Figure 2).
4. *Click* the OK button, as shown in Figure 2:

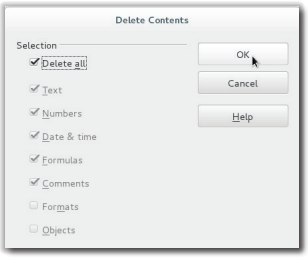

Figure 2: Displaying the Delete Contents Dialog Box

22. How can you insert blank cells in your worksheet?

Ans. The OpenOffice Calc allows you to insert one or more blank cells in your worksheet. Perform the following steps to insert blank cells:

1. *Select* a range of cells where you want to insert the blank cells. In our case, we have selected B2:C8, as shown in Figure 3:

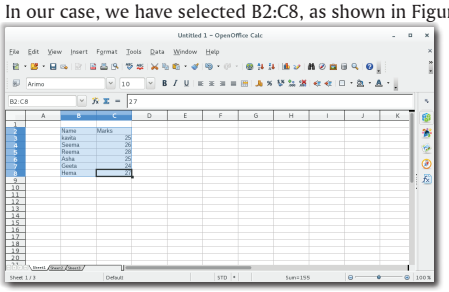

Figure 3: Selecting Cell Ranges

2. *Select* the Insert Cells option through the Menu bar, as shown in Figure 4:

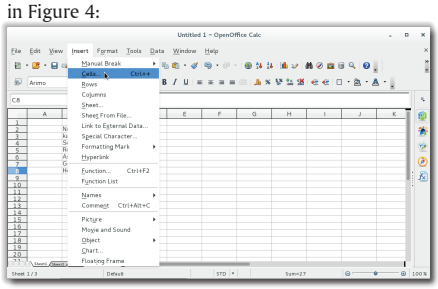

Figure 4: Selecting Insert Cells

3. *Select* the desired option for shifting the existing cells to make way for the new blank cells. In our case, we have selected the Shift cells right option (Figure 5).
4. *Click* the **OK** button, as shown in Figure 5.

Figure 5: Displaying the Insert Cells Dialog Box

As you click the OK button, the selected number of blank cells gets inserted in your worksheet, as shown in Figure 6:

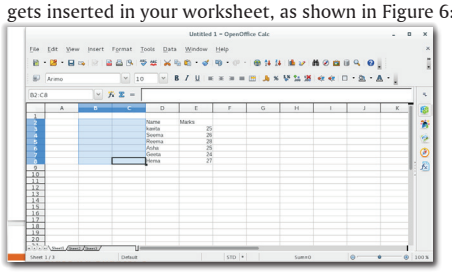

Figure 6: Displaying the Document After Inserting Columns

If you want to stop the process of insertion of cells, *click* the Cancel button in the Insert Cells dialog box (Figure 5).

23. Write steps to insert three columns in a worksheet.

Ans. Perform the following steps to insert a column in a worksheet:

1. *Select* a column before an existing column where you want to insert a new column in your worksheet. In our case, we have selected column E (Figure 7).
2. *Select* the Insert menu on the menu bar. A drop-down menu appears (Figure 7).
3. *Select* the Columns option in the drop-down menu, as shown in Figure 7:

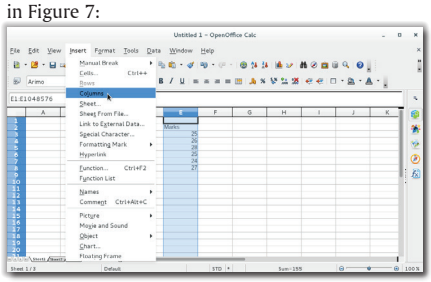

Figure 7: Inserting a Column

Now, the column is inserted. Similarly, you can insert two more columns, as shown in Figure 8:

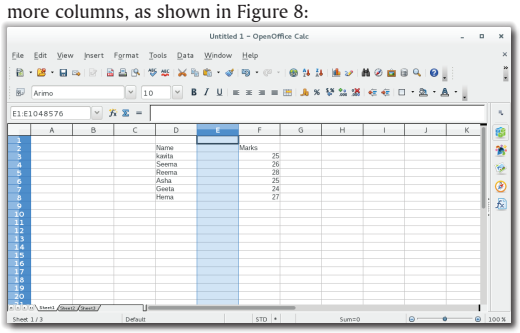

Figure 8: Displaying the Document After Inserting Three Columns

24. Explain different types of charts available in Calc.

Ans. Calc supports various types of charts which include: Area chart, Column chart, Line chart, XY (Scatter) chart, Column and Line chart, Pie chart, Bar chart, Net chart, Stock chart, and Bubble chart.

- **Area Chart:** An area chart is generally used to highlight change over time.
- **Column Chart:** A column chart is used to emphasize comparison of data items within a specified time period.
- **Line Chart:** A line chart is a type of graph that displays data trends at regular intervals.
- **Scatter Chart:** To depict the relationship among numerical values using a variety of data series, you can use the XY (scatter) chart.
- **Column and Line Chart:** The combination of the line and column charts is known as the column and line chart.
- **Pie Chart:** A pie chart is a round chart that is divided into zones which demonstrate the proportional size of an item with respect to the sum of all the items.
- **Bar Chart:** A bar chart is used to demonstrate comparison among individual items.
- **Net Chart:** A net chart is used to display data as points connected by some lines in a grid or net that looks like a spider net or a radar tube display.
- **Stock Chart:** A stock chart is used to demonstrate the market movement in terms of the opening price, bottom price, top price, and closing price.
- **Bubble Chart:** A bubble chart is used for representing relations among three variables.

25. Define formatting. How is it useful in a spreadsheet program?

Ans. Arranging data in a particular style or format is known as formatting. Data formatting helps in enhancing the appearance of your worksheet. It also helps in making your data bold, italic, and underlined to attract the viewer's attention. Data formatting has numerous forms, such as number formatting, date and time formatting, and text formatting.

26. List various components of a chart.

Ans. Various components of a chart are as follows:

- **X-axis:** Refers to a horizontal axis, which is also known as category axis
- **Y-axis:** Refers to a vertical axis, which is also known as a value axis

- **Data Series:** Refer to a set of data that you want to display in a chart
- **Chart Area:** Refers to the total space that is enclosed by a chart
- **Plot Area:** Refers to the main region of a chart in which your data is plotted
- **Chart Title:** Denotes the type of data plotted in a chart
- **Axes Titles:** Mention the name or title for X, Y and Z axes
- **Legend:** Refers to a unique color or pattern that is assigned to a data series
- **Gridlines:** Refer to the horizontal and vertical lines within the plot area in a chart
- **Data Label:** Provides additional information about a value in the chart that is coming from a worksheet cell.

27. Explain the following terms:

a. Chart sheet

b. Embedded chart

Ans.

a. **Chart sheet:** A chart sheet contains only one chart and does not display the source data. It is mainly used when you want to view or print the chart.

b. **Embedded chart:** An embedded chart and its source data both are placed in the same worksheet.

28. Explain the following function: = IF (10>20; "Ok"; "too large")

Ans. The preceding function returns the "too large" value because the condition 10>20 is false as 10 is smaller than 20.

Application-Oriented Questions

1. Answer the following questions:

a. Tick (✓) the following option(s) that show the use of a spreadsheet program.

- Controlling output from scanner.
- Drawing picture of the car you want to buy.
- Calculating loan repayments.
- Writing application to the bank manager.
- Estimating future spending.
- Displaying the balance carried forward each month of the year in a graph.

b. Tick (✓) the option representing the space a spreadsheet file (.ods) uses on a back-up storage device.

- 100 MB
- 1 GB
- 10 KB
- 30 bytes
- 0 bits

Ans. a.

- Controlling output from the scanner.
- Drawing a picture of the car you want to buy.
- Calculating loan repayments. (✓)
- Writing an application to the bank manager.
- Estimating future spending.
- Displaying the balance carried forward each month of the year in a graph. (✓)

b.

- 100MB
- 1GB (✓)
- 10KB
- 30bytes
- 0bits

2.

a. The mechanic wants to purchase an air filter from an online store.

- Write the labels in the correct order to show how the mechanic could do this.
- Pay using a credit/debit card.
- Go to the online store using a Web browser.
- Look at the search results and select the required air filter.
- Type the keywords, such as air filter, and press the search button.

b. The mechanic is using a search engine to find an online store to purchase the air filter. Give two reasons why the mechanic should search Indian websites only.

c. The mechanic gives customers a credit rating from 1 to 3 as per the following scale:

Pays promptly and in full on collecting the car	1
Pays within three weeks of collecting the car	2
Money still due after a month	3

A customer who pays after a month is given the same credit rating as a customer who does not pay.

- Give one limitation of this code system designed in Calc.
- Try to design a better coding system.

Ans.

a. Answers of the following questions are given as follows:

- The following labels in the correct order are shown as follows:
  - First Name
  - Last Name
  - Address
  - Payment Mode (by credit card, debit card, and cash)

- Advantages of using the credit or debit card for payments are as follows:
  - You can buy the goods easily and at any time.
  - You are not required to carry cash.
  - You have full records of your purchase.
- Disadvantages of using the credit or debit card for payment are as follows:
  - You have to pay additional charges, such as annual fees and service tax.
  - You have to pay the amount even if your credit or debit card has been stolen and misused by others.

Figure 9 shows how to search for online stores to buy air filter in India:

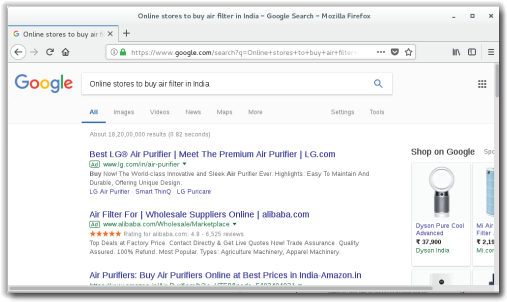

Figure 9: Searching for Online Stores to Buy Air Filter

The search result is shown in Figure 10:

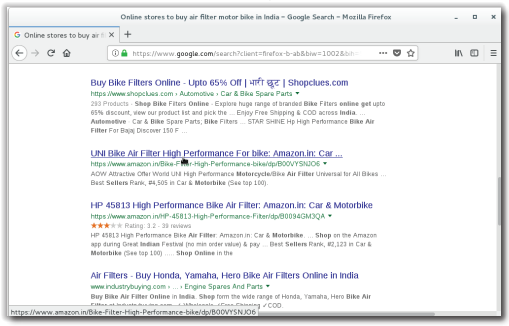

Figure 10: Displaying the Result of Searching

We click Amazon.in: Filters – Motorbike Accessories & Parts: link. A Web page related to different types of motorbike accessories and parts is opened as shown in Figure 11:

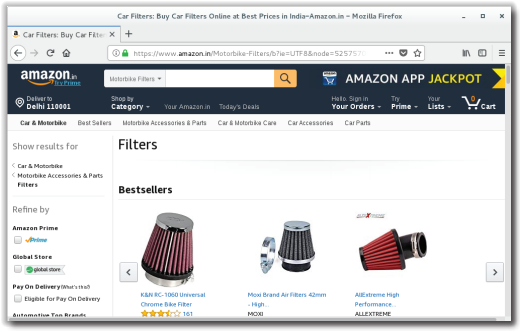

Figure 11: Opening the Selected Web Page

Click on the required product. The Web page gets opened, as shown in Figure 12:

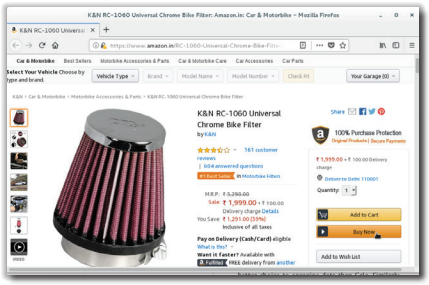

Figure 12: Clicking on the Required Product

b. The two reasons for searching the required information on Indian websites only are as follows:
   1. Fast delivery
   2. Low cost because if the mechanic purchases an air filter from the foreign market, then the cost would also include import duties.

c. Answers to the given questions are as follows:
   - The limitation of this system is that it does not generate the correct credit rating for the customers as it always provides 3 credit ratings for the customer who pays after one month and who does not pay at all.
   - We modify the preceding coding system for better and correct output, which is shown as follows:

Pays promptly and in full on collecting the car	1
Pays within three weeks of collecting the car	2
Pay after a month	3
Defaulter (Payment is not made at all)	4

3. Now, you have a fairly good knowledge of the OpenOffice Writer as well as the OpenOffice Calc. Write down three instances where the Writer is a better choice to organize data than Calc. Similarly, write down three instances where Calc is a better choice to organize data than Writer.

Ans. The three instances where Writer is the best choice to organize data are:
1. As a student, Writer is used to create notes and articles.
2. In the office, Writer is used to create a letter and other official documents.
3. As a scientist, Writer is used to create a thesis and to note down details about experiments.

The three instances where Calc is the best choice to organize data are:
1. In school, Calc is used to maintain the details of the students and teachers.
2. In Office, Calc is used to maintain employees' personal details and offices expenses details.
3. At home, Calc is used to maintain daily expenses details.

4. Create a salary table for calculating salary of your school's teachers.

a. The salary table contains the following fields:
   - Basic Pay
   - Designation

- Dearness Allowance
- House Rent Allowance (HRA)

b. Create a salary table that includes all these 4 components for 10 teachers.

c. After entering all the information, calculate the total salary of each teacher using a formula.

d. Now, calculate the total amount of salary of all the teachers using a formula.

Ans.

a. The salary table having the mentioned fields is shown in the Figure 13:

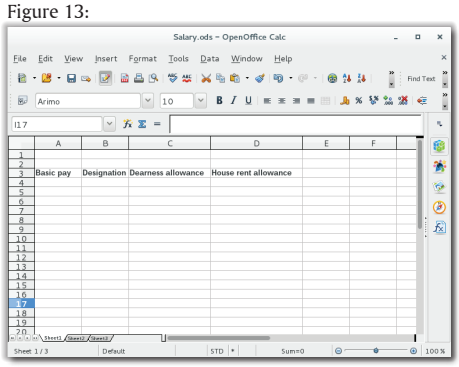

Figure 13: Four Components of Salary Table

b. The salary table that includes all these 4 components for 10 teachers is shown in Figure 14:

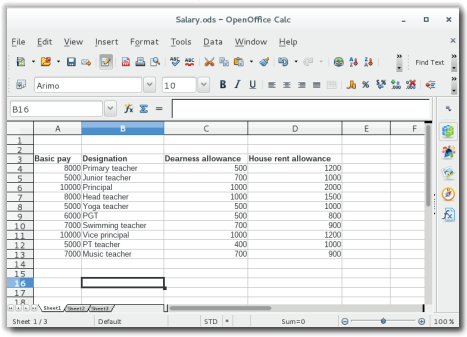

Figure 14: Data of 10 Teachers Entered in Salary Table

c. The total salary of each employee (teacher) is calculated by adding all the fields except the designation field. The total salary of each employee is shown in the following Figure 15:

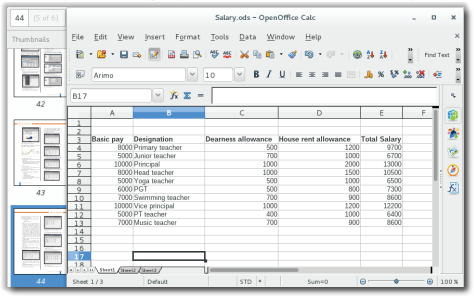

Figure 15: Total Salary of Employees

d. The total amount of salary of all the teachers is calculated by using the, =Sum(G4:G13) formula. The result is displayed in the following Figure 16:

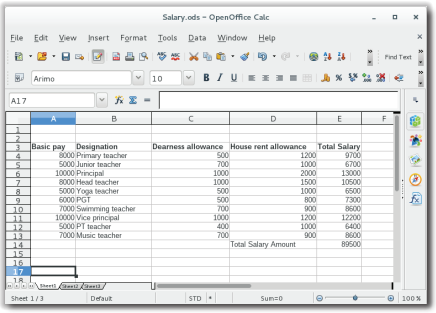

Figure 16: Total Salary Amount

5. Create a chart for the salary table.

a. Insert a pie chart that depicts all the components of the salary table.

b. Insert a doughnut chart to depict all plotter values.

c. Copy/place both charts in different sheets and change the title of the pie chart. After that, change the title of the doughnut chart.

Ans.

a. The pie chart that depicts all the components of the salary table is shown in Figure 17:

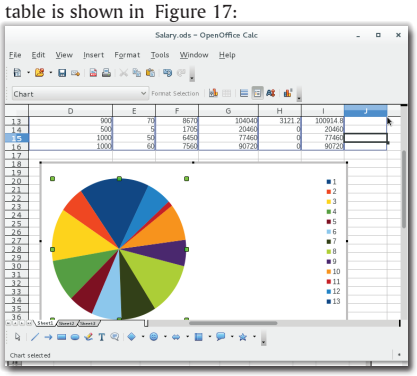

Figure 17: Pie Chart shows all Components of Salary Table

b. The doughnut chart to depict all plotter values table is shown in the Figure 18:

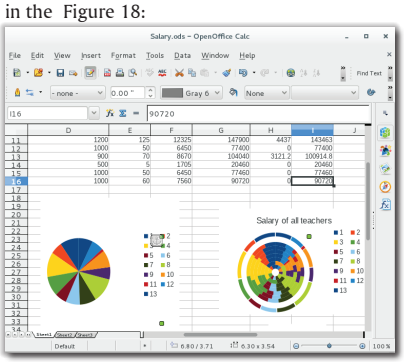

Figure 18: Doughnut Chart shows Salaries of All Teachers

c. The output as per the given instructions is shown in the Figure 19:

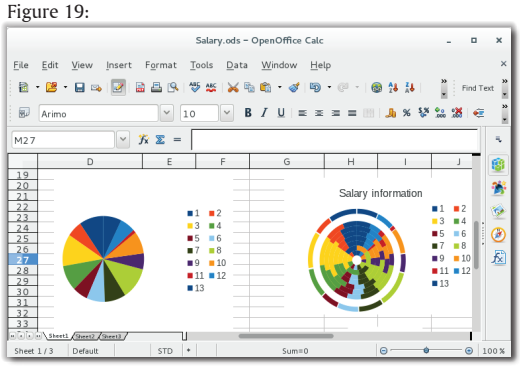

Figure 19: Doughnut Chart