

**DELHI PUBLIC SCHOOL, JAMMU**  
**FOUNDATION WORKSHEET**  
**SESSION 2020-21**

**TOPIC:- FORMULAS AND FUNCTIONS IN MS EXCEL**

**SUBJECT:- COMPUTERS**

**CLASS:- VII**

**INTRODUCTION:-** Students will learn about the following sub- topics:-

- Formulas in excel
- Creating a basic Formula
- Using Formula On Text
- Cell Range and Cell Reference
- Formula Errors
- Functions
- Common Functions
- Managing Worksheets

**Explanation:-**

One of the imprint attributes of Excel is its ability to perform calculation either by using a Formula or a Function. In this topic we will learn the basics of Formulas and Functions in M S Excel.

**Formula:-** Formulas are the user defined instructions to perform calculations relating tasks involving addition, subtraction, multiplication and division etc. A formula establishes a relationship between two or more cells. It can include cell addresses, numbers, arithmetic operators and parenthesis. Using it, we can perform simple as well as complex calculations.

A Formula must begin with an equal to (=) symbol followed by cell reference and operators. It may contain below mentioned elements:

Reference: A cell or a range of cells that we want to include in calculations.

Operators: Symbols (+, -, ^, \*, %, \$, # etc)

Constants: Numbers or text values that do not change.

Functions: Pre- defined formulas in Excel.

**Creating A Basic Formula:** Basic Formula involves only one type of operator in it. Let us use to calculate the sum of the numbers in C1, C2, C3 ..... C7 and display result in C8.

- Enter the data in cells e.g maths marks of seven students.
- Click on the cell C8 where you want to display the result) and type ‘ =’ sign.
- Now type = C2 +C3+ C4+C5+C6+C7
- Press enter Key and you will get total marks.

**Using Formula on Text:-** we can perform addition on character and string data type. The ampersand symbol is used to perform addition. Addition of two or more text values is called concatenation. For example:

- Enter any string type value in cell A1 and B1, say kips in A1 and Indian in B1.
- Enter the formula =A1 & B1 in cell C1 and press the enter key.
- It will display kips India in C1.

**Cell Range:** A range is a group of contiguous cells, which form the shape of a rectangle. It can be a group of two cells or as big as the entire worksheet. For cell C1:C10 indicates the range.

**Cell Reference And its Types:-** The cell address that we use in the formula is known as the cell reference. For example A1 where A denotes column name and 1 denotes row number. There are three types of Cell References.

- **Relative Reference**
- **Absolute Reference**
- **Mixed Reference**

**Relative Reference:-** A relative reference in Excel is a cell address without \$ sign in the row and column coordinates like A1. When a formula with relative cell is copied to another cell, the reference changes automatically based on the relative position of rows and columns. By default Excel uses relative reference. For example =A1+A2.

**Absolute Reference:-** An absolute cell reference is a cell address that contains dollar sign before the column name and row number. For example =\$A\$1 +\$A\$2.

**Mixed Reference:-** It is a combination of Relative and Absolute reference. In this type of reference, either row or column has to remain fixed e.g. \$A1 + A\$2.

**Formula Error :-** In Microsoft Excel, if any formula is entered incorrectly, then Excel displays an error message instead of the value and assists you in identifying and fixing the problem.

Some of the common errors are:

- **##### Error:-** This error occurs if the column is not having enough space to accommodate the value.
- **# Name? Error:-** It occurs if the formula is used incorrectly.
- **# Value Error:-** It occurs if the formula contains invalid data.
- **# Ref! Error:-** This error occurs when the formula refers to a cell that does not exist.
- **# Div/0 Error:-** This error occurs if the number is divided by 0.

**Functions:-** Functions are the pre-designed formulas in Excel to perform both simple and complex calculations. It saves time and eliminates the chances of writing wrong formulas. They accept arguments and return a value.

**Arguments:** Arguments are the inputs to functions on which calculations are performed to find out the final result.

**Values :** Values can be numbers, text, etc. and are enclosed within parentheses.

A Function must begin with equals to (=) sign followed by the function name and then the list of arguments.

For example, **=Function name(argument1, argument2)**

**= SUM(A1:A5)** Where sum is function name and A1:A5 are arguments.

### **Rules To Enter A Function**

- All Excel function must begin with =sign.
- Function name must be valid Excel name. For e.g SUM, AVERAGE.
- Function name must be followed by an opening and closing parenthesis.
- Arguments are enclosed in the parenthesis.

### **Common Functions**

1. **SUM():** The Sum Function returns the total of the range values. For example =SUM (A1:A5)
2. **AVERAGE():** it returns the average of the range values. For example =AVERAGE (A1:A5)
3. **MAX():** It is used to find the largest value in given range. For example = MAX (A1:A5)
4. **MIN():** It is used to find the lowest value in the given range. For example =MIN (A1:A5)
5. **TODAY:** It is used to display the current date. For example =TODAY ()

### **Function Library:-**

There are many functions defined in Excel and it is beyond the capacity to remember the name and functionality of each of them. To overcome it, Excel has clubbed all the functions in the Function Library group of Formula tab.

### **Managing Worksheets:**

**1.Renaming Worksheet:-** By default, excel displays three sheets in a worksheet naming SHEET1, SHEET2 and SHEET3 but we can add as many sheets we require and assign any name to them.

To Rename a Sheet follow the given steps:-

- Right Click on the Sheet 1
- A Shortcut menu will appear. Click on the Rename option.
- The name of the sheet get highlighted. Type the name 'Kips' and press Enter Key.
- Note the name of the sheet1 has been changed to 'kips'.

**2. Deleting Worksheets:-** We can Delete a worksheet if it is of no use. To delete a Worksheet:

- Right –click on the sheet which you want to delete.
- Click on the delete option.

## Test Your Knowledge

### Multiple choice Questions:-

1. Which Function is used to find the largest number in the range?

- a) Count()                      b) MIN()                      c) MAX()

**Ans. Max**

2. Formula must begin with \_\_\_\_\_.

- a) =                      b) \$                      c) %

**Ans. =**

3. Excel has clubbed all the functions in the \_\_\_\_\_ Library.

- a) Formula                      b) Average                      c) Function

**Ans. Function Library**

4. By default Excel has \_\_\_\_\_ sheet in a worksheet.

- a) Four                      b) Three                      c) six

**Ans. Three**

5. The cell address we use in the formula is known as \_\_\_\_\_.

- a) Cell Value                      b) Text Value                      c) Cell Reference

**Ans. Cell Reference**

6. The \_\_\_\_\_ character is used for concatenation of strings.

- a) %                      b) @                      c) \$

**Ans. \$**

7. To copy the Formula from the above cell, press \_\_\_\_\_

- a) Alt +                      b) Ctrl = '                      c) Ctrl +

**Ans. Ctrl+'**

8. Microsoft Excel Follows the \_\_\_\_\_ rule to evaluate the mathematical expression.

- a) BEDMAS                      b) BODMAS                      c) BDOMAS

**Ans. BEDMAS**

9. TODAY() function is used to display \_\_\_\_\_.

- a) Day                      b) Date                      c) Time

**Ans. Date**

10. \_\_\_\_\_ function is used to find total of the range of values.

- a) MAX()                      b) SUM()                      c) AVERAGE()

**Ans. SUM()**

### Very Short Questions:

11. Which function finds the smallest number in a range?

**Ans. MIN()**

12. Which key combination is used to get sum of the values of adjacent cells?

**Ans. Alt+ =**

13. Which cell reference is default cell reference of Excel?

**Ans. Relative Cell Reference**

14. Which cell reference uses \$ sign before column name and row number?

**Ans. Absolute cell Reference**

15. What is the extension of Excel files?

**Ans.** .xls

**16.** Which Shortcut key is used to copy the formula in next sheet?

**Ans.** Ctrl+c

**17.** How many cell references are used in Excel ?

**Ans.** Three

**18.** Which function returns the average of the range of values?

**Ans.** AVERAGE()

**19.** What is Range?

**Ans.** A range is a group of contiguous cells, which forms the shape of rectangle.

**20.** What is Value?

**Ans.** Values can be numbers or text.

### **Short Questions:-**

**21.** What is cell reference?

**Ans.** The cell address that we use in the Formula is known as the cell reference. For example A1 where a denotes column name and 1 denotes row number. There are three types of Cell References.

**22.** What is Formula?

**Ans.** Formulas are the user defined instructions to perform calculations relating tasks involving addition, subtraction, multiplication and division etc.

**23.** What do you mean by Function?

**Ans.** Function are the pre designed formula in Excel to perform both simple and complex calculations. It saves time and eliminate the chances to write wrong formulas. They accept arguments and return value.

### **Long Questions:-**

**24.** What do you understand by term concatenation? Explain with the help of an example.

**Ans.** Addition of two or more text values is called concatenation. For e.g

- Enter any string type value in cell A1 and B1, say kips in A1 and Indian in B1.
- Enter the formula =A1 & B1 in cell C1 and press the enter key.
- It will display kips India in C1.

**25.** How will you rename a Worksheet?

**Ans.** To Rename a Sheet follow the given steps:-

- Right Click on the Sheet 1
- A Shortcut menu will appear. Click on the Rename option.
- The name of the sheet get highlighted. Type the name 'Kips' and press Enter Key.  
Note the name of the sheet1 has been changed to 'kips'

