

## UNIT - 1 Introduction to Ms - Excel

- \* What is a software?
- Softwares are a set of programmes or instructions which are designed to perform a specific or dedicated task inside the computer system.

### \* Spreadsheet

- A spreadsheet is a document that stores data in a grid of horizontal rows and vertical columns.
- Here, the rows are denoted using numbers like 1, 2, 3, ... and the columns are denoted by alphabets like A, B, C, ...
- The combination of each row and column is called as cell and the cell where the cursor is present at that particular point of time is called active cell.

	A	B	C	D
1	100	200	300	400
2	500	600	700	800
3	900	1000	1100	1200
4	1300	1400	1500	1600
5	1700	1800	1900	2000

- \* A spreadsheet is also known as worksheet.

The most widely used spreadsheet is Ms - Excel.

## \* Features of spreadsheets / Characteristics

1. Scrolling and zooming.
2. Formatting cells.
3. Supports multiple sheets.
4. Sorting.
5. Mail Merge.
6. Charts and graphs.

## \* Applications of spreadsheet

1. It allows the user to enter and calculate numerical data.
2. It helps to manage receipts, generate financial reports, create budgets etc. for any business.
3. It is useful for sorting and analysing data.
4. Complex calculations can be performed quickly.
5. The calculations are always accurate.

## \* MS-Excel

MS-Excel is an application software which comes under Microsoft Office package and allows the user to insert, store, modify, calculate data and also to create charts and graphs in the form of worksheets.

1 million rows and 16,000 columns.

$$= \text{SUM}(C_2, D_2)$$

~~Ques~~ Ans - The features of spreadsheets are -

### 1. Scrolling and zooming -:

- Scrolling is the feature of spreadsheet which helps us to move the spreadsheet to right and left or up and down.
- As a spreadsheet is not limited to small number of cells, scrolling is an important feature for moving the sheet.
- Zooming is that feature of spreadsheet which makes the size of the sheet bigger by zooming in or smaller by zooming out.

### 2. Formatting cells -:

- In a cell, we insert data and this data or cell can be formatted by using this feature.
- Formatting cells includes many formatting options like filling the cell with colour, changing the font or size of the data etc.
- This feature makes our spreadsheet attractive.

### 3. Supports multiple sheets -:

- In a spreadsheet programme, there are multiple number of sheets.
- The default number sheets in a spreadsheet is three.
- We can add more sheet as per our requirement.

#### 4. Sorting :-

- Sorting is an important feature of a spreadsheet which arranges the data in a particular way.
- There are three types of sorting - number sorting, alphabetical sorting and date and time sorting.
- Number sorting sorts the numbers from ascending to descending or vice versa, alphabetical sorting sorts from A-Z or Z-A and date and time sorting sorts from new to old or old to new.

#### 5. Mail-Merge :-

- Mail merge is the feature of spreadsheet that allows us to create multiple documents at once.
- This feature allows us to send a single document to multiple recipients at the same time.

#### 6. Charts and graphs :-

- This feature of spreadsheet allows us to add charts and graphs to our spreadsheet.
- It is the visual representation of worksheet data.
- The charts and graphs helps us to understand the data more clearly by displaying it in different patterns.

## \* Applications / Uses of MS-Excel

1. It helps to arrange data in organised way.
2. It also helps to perform mathematical calculations.
3. It allows a user to compare data through charts.
4. It also allows to compare two worksheets side by side.

## \* Features of MS-Excel

1. Result oriented user interface.
2. Organise and explore massive data sets within significantly expanded spreadsheets.
3. It provides a powerful support for working with tables.
4. It can be converted into PDF form for easy sharing.
5. Communication through professional looking charts.
6. Formula auto complete.

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## Starting MS-Excel 2010

- Step 1 :- Click on the Start button in the desktop.
- Step 2 :- Click on All Programs from the list.
- Step 3 :- Go to the Microsoft Office option.
- Step 4 :- Click on the MS-Excel 2010 option from the list.

### \* Backstage View:

The 2010 version of MS-Excel has replaced the traditional Office button to a new tab that is File Tab. When the user clicks on the File Tab, the Backstage view appears on the screen.

The Backstage View is a full screen view which appears when the user clicks on the File Tab.

The Backstage View gives the user variety of options for saving, opening a document, printing and sharing the document.

It has three panes - : 1. Left pane - It lists command for creating, saving, printing etc for our file.

2. The Middle pane - It displays additional options according to the command selected from the left pane.

3. The Right pane - It displays the entire details regarding the file like number of pages, word sheets, were location of the file inside the computer etc.

\* WRAPPING TEXT AND MERGING CELLS

WRAPPING TEXT - Wrap text is one of the features which allows the user to display multiple lines inside a single cell.

Step 1 - Select the cells for which we want to wrap the text.

Step 2 - On the Home Tab in the Alignment group, click on the Wrap Text command button.

Step 3 - The text inside the cells will now be wrapped.

MERGING CELLS - Merging cells is the feature which allows the user to combine two or more cells as a single cell.

Steps

Step 1 - Select the cells which we want to merge.

Step 2 - On the Home tab in the Alignment group, click on the Merge Cells command button.

Step 3 - The selected cells will now be merged.

Q1) What is Microsoft Excel? Mention its features.

→ Microsoft Excel is an application software which allows the user to insert data, graphs and charts and also to store, modify and calculate the data. It comes under the Microsoft Office package.

The features of MS-Excel are -

1. Scrolling & zooming

• Scrolling is that feature of MS-Excel

## \* Opening a Workbook

It is a feature of MS-Excel which allows a user to open an already existing workbook/excel file/document inside the computer system.

### Steps

Step 1 - Click on the File tab, to get the backstage view.

Step 2 - Click on the Open button in the left pane.

Step 3 - The Open Dialog box appears on the screen.

Step 4 - Locate the file or folder where our workbook is present.

Step 5 - Select the workbook we want to open.

Step 6 - Click on the Open button.

The keyboard shortcut to open is  $Ctrl + O$ .

## \* Saving a Workbook

- It is a feature of MS-Excel which allows the user to store the workbook to any the desired locations in the computer system for future reference.

### Steps -

Step 1 - Click on the File tab to get the backstage view.

Step 2 - Click on the 'Save As' button in the left pane.

Step 3 - The 'Save As' Dialog box appears.

Step 4 - Locate the file or folder where we

want to save the file.

Step 5 - Type the name of the file.

Step 6 - Click on the 'Save' button.

## \* Formatting a Worksheet

### ① To format text in Bold or Italic.

Step 1 - Select a cell or range of cells which we want to change to Bold or Italic.

Step 2 - On the Home tab, in the Font group, click on the Bold or Italic command as per requirement.

Step 3 - The selected text will now be changed to Bold or Italic.

### ② To format text as Underline.

Step 1 - Select a cell or range of cells which we want to underline.

Step 2 - On the Home tab, in the Font group, click on the drop-down arrow just beside the Underline command button.

Step 3 - Choose the option as per requirement.

Step 4 - The selected text will now be underlined.

### ③ To change the font style.

Step 1 - Select the cells or range of cells for which we want to change the font style.

Step 2 - On the Home tab, in the Font group, click on the drop-down arrow just beside the Font Style command button.

Step 3-1: A list of options to change the font style appears on the screen, choose and select the desired option as per the requirement.

Step 4-: The font style for the selected text will now be changed.

#### (4) To change the Font style.

Step 1-: Select the cells or range of cells which for which we want to change the font size.

Step 2-: On the Home tab, click in the Font group, click on the drop-down arrow just beside the Font size command group.

Step 3-: A list of options to change the font size appears on the screen, choose the desired and select the desired option as per the requirement.

Step 4-: The font size of for the selected text will now be changed.

#### \* Creating a Workbook or Worksheet.

Step 1-: Click on the File tab to get the Backstage view.

Step 2-: Choose the option New in the left pane.

Step 3-: Select the option Blank Workbook from the dialog box.

Step 4-: Click on the Create button.

\* The keyboard shortcut to create a new workbook is Ctrl+N.

## \* Creating a New Worksheet.

This allows the user to add new worksheets unto the workbook. By default a workbook has three sheets i.e., sheet 1, sheet 2, sheet 3.

Step 1- Click on the Insert Worksheet tab at the bottom of the sheet.

Step 1- On the Home tab in the Cells group <sup>or</sup> click on Insert command button.

Step 2- A list of options appears on the screen.

Step 3- Click on the Insert Sheet option.

## \* Moving Worksheets.

- To change the order of worksheets in a workbook, click the tab of the worksheet which we want to move and drag it to the location where we want.

## \* Deleting a Worksheet.

Deleting worksheet allows the user to remove the worksheet from an existing workbook.

Step 1- Select the sheet which we want to delete.

Step 2- Right click and choose the option Delete.

OR

Step On the Home tab in the Cells group, at ~~choose~~ <sup>click on</sup> the option Delete Sheet command button.

- Choose the option Delete Sheet from the list.

\* The keyboard shortcut for delete is

## \* Inserting or deleting a hyperlink.

### Step 1: Adding or deleting a hyperlink

Step 1:- Select the cells for which we want to add hyperlink.

Step 2:- Right click and choose the option Hyperlink on the list.

OR

On the Insert tab in the Hyperlink group, choose the Hyperlink command button.

Step 3:- The text inside the selected cells will now be hyperlinked.

### Deleting

Step 1:- Select the cells for which we want to remove hyperlink.

Step 2:- Right click and choose the option Remove hyperlink on the list.

OR

Step 3:- The text inside the selected cells will now be removed as the hyperlink.

### Save As

- The Save As command allows the user to save a new document.
- The Save As command allows the user to choose the location where to save the file.
- Save allows the user to save the file with a suitable name.
- The Save command allows the user to save a pre-existing document.
- The Save command does not allow the user to

# 14/9/28 d-2. Formulas and Functions in MS-Excel

(Remarks)

1. Perform operations with formulas and functions.
2. Insert references.
3. Perform calculations by using SUM funct.
4. Perform calculations by using MIN & MAX funct.
5. " " " COUNT funct."
6. " " " AVERAGE funct."

## \* Formulas

- Formulas are equations that provide performs mathematical calculations on data values in the worksheet.

A formula can execute addition, subtraction, multiplication and division. It is a combination of constant values, cell references and mathematical operators.

## \* Copy & Paste Formula

- The copy and paste feature allows the user to copy as text or formula and then paste it into another cell. The steps to copy are -

Step 1:- Select the cell from which we want to copy the formula.

Step 2:- Right click and choose the option copy from the list.

OR

On the Home tab in the Clipboard group, choose the command button copy.

OR

Press Ctrl + C on the keyboard.

Step 3:-

## Steps to paste

Step 1-: Choose the cell where want to paste our formula.

Step 2-: Right click and choose the option Paste from the list.

OR

Step 3: On the Home tab in the Clipboard group, choose the command button Paste.

OR

Press Ctrl + V on the keyboard.

+ Difference between copy & cut.

Copy

Cut

- |  |  |
|--|--|
| 1. In copy, the content remains in its original place.           | 1. In cut, the content is removed from its original place. |
| 2. Copy can be done multiple of times from the original content. | 2. Cut can be done only once from its original content.    |
| 3. The shortcut key for copy is <u>Ctrl + C</u> .                | 3. The shortcut key for cut is <u>Ctrl + X</u> .           |
| 4.   |  |

## \* Cell References

- The cell addresses inside a formula is called as cell references.

## \* Types of cell References

- There are three types of cell referencing -

(i) Relative Reference - When a user copies or moves a formula to other cells, the cell reference automatically gets changed. This concept is known as relative reference.

Example -

	A	B	C	D	E
1	Roll	Maths		Total	
2	1	95	50		
3	2	50	50		

The formula in cell D2 = B2+C2, when the user copy and paste the formula the cell reference is automatically changed i.e. it becomes D3 = B3+C3.

(ii) Absolute Reference - Absolute reference is used when a user do not want to change the address of the cell even on copying the formula to another cell. To use absolute referencing a \$ sign ~~must~~ must be added before column name and row number.

Example - E2 = B2+C2+\$D+\$2.

With this, the value in the cell D2 won't change even if we copy and paste the formula to other cells.

(iii) Mixed Reference - It is a combination of relative and absolute reference. Here, either a row or a column has to remain fixed.

## \* FUNCTIONS

- Functions are pre-defined formulas that perform calculations by using specific values called arguments in a particular order.

Each function has a specific order called syntax, which must be strictly followed to make the function work properly.

Eg :- =SUM(A1:A9)

## \* Difference between formula and function .

### FORMULAS

1. Formulas are the simple equations given by the user to perform mathematical calculations.
2. While performing with formulas, the equal sign is not required to use at the beginning.
3. With formulas we can only perform addition, subtraction, multiplication and division.
4. Eg: ~~D3 = B3 + C2~~
5. It is not always that it should be in particular order.

### FUNCTIONS

1. Functions are the (pre-defined) formulas which are already set in the system.
2. While performing with functions, the equal sign is mandatory to right give at the beginning.
3. With functions, the performance is not limited to addition, subtraction, division or multiplication.  
Eg =SUM(A1:A9)

\* Formulas contain mathematical operators and contains constant value.

\* Writing a formula can be little lengthy.

### \* SUM Function

- The SUM function is used to calculate the total of the date values in the specified mentioned cell addresses.

The syntax for SUM function is -

$$= \text{SUM}(\text{range of cells})$$

Eg:-  $= \text{SUM}(A1:A9)$

This will calculate the total sum of the data values from the cell A1 to A9.

### \* MIN Function

- The MIN function returns the smallest value from a supplied set of numerical values.

$$= \text{MIN}(\text{range of cells})$$

Eg:-  $= \text{MIN}(B3:B7)$

This will display the ~~the~~ lowest value present in the cell B3 to B7.

### \* MAX Function

- The MAX function returns the greatest value from a supplied set of numerical values.

$$= \text{MAX}(\text{range of cells})$$

Eg:-  $= \text{MAX}(C3:C7)$

This will display the largest value from the cell C3 to C7.

## \* COUNT Function :

- The COUNT function returns the count of numeric values in a supplied set of cells. This includes both numbers and dates.

[= COUNT(Range of cells)]

For eg - : = COUNT(A1:A7)

This displays the count of only numeric value from the cell A1 to A7.

## \* AVERAGE Function :

- The AVERAGE function is used to calculate the arithmetic mean or average of a list of supplied numbers.

[= AVERAGE(Range of cells)]

For eg - : = AVERAGE(A13:A17)

This returns the mean value from the cell A13 to A17.

## UNIT - 3 Common functions and formula errors.

25 marks

1. Rules to enter a function.
2. Perform conditional operation.
3. Perform logical operation by using IF.
4. SUMIF, AVERAGEIF function.
5. Protect a worksheet.
6. Protect workbook structure.
7. Encrypt a workbook with password.
8. Insert text boxes, shapes, images in excel.

### \* RULES TO ENTER A FUNCTION.

1. All functions must begin with an equal sign.
2. A function name must be a valid one.  
Ex: eg -: SUM, AVERAGE etc.
3. A function name must be followed by an open and close parenthesis.
4. Arguments are enclosed in the parenthesis.  
Ex: eg -: =SUM(A1:A5).

### \* PERFORM CONDITIONAL FUNCTION OPERATIONS BY USING FUNCTIONS.

- The user can create conditional functions by using AND, OR, NOT and IF.

#### ① AND Function

- The AND function returns <sup>TRUE</sup> ~~false~~, if all the conditions are true. and returns FALSE if any conditions are false.  
Ex: eg -: =IF(AND(A1>=60, B1<100), "FIRST", "SECOND")  
This will return FIRST if all the conditions

are true, otherwise if any of the conditions is not satisfied it will return SECOND.  
~~The OR function returns TRUE~~

### ② OR function

- The OR function returns TRUE if any of the condition is true and returns FALSE if all conditions are false.

For eg :- =IF(OR(A1>60, B1<100), "FIRST",  
                        "SECOND")

This will return FIRST if any of the specified condition is true, otherwise it will display SECOND.

### ③ NOT function

- The NOT function returns the opposite to a supplied logical value.  
If the supplied value is TRUE, the function returns FALSE. If it is FALSE, the function will return TRUE.

### ④ IF function

- The IF function checks whether the condition is fulfilled or not and returns the value according to it.

For eg :- =IF(A1>=33, "PASS", "FAIL")

This will return PASS if the value in the cell A1 is greater than or equal to 33, otherwise it will return FAIL.

## Charts, Components of charts & its types

(Content) →

- i) Create a new chart
- ii) Switch bet<sup>n</sup> row & column in source data
- iii) Analyse data by using quick analysis format charts.
- iv) Resize charts, add & modify chart elements.
- v) Apply chart layouts & styles.
- vi) Modify object properties.
- vii) Add alternative text to objects for accessibility.
- viii) Printing on worksheet.

\* Charts - It allows the users to present the data in a worksheet in a visual format by using variety of graph types.

### Benefits of charts

- i) It helps to understand data in a more better way.
- ii) It helps to communicate efficiently.
- iii) It helps to highlight important data.
- iv) It helps to compare different data sets.

### Creating a New Chart

Step 1: Select the datasets in the cell for which we want to create the chart.

Step 2: On the Insert Tab, in the Charts group, select the desired chart category.

Step 3: Choose the chart type from the Drop Down menu.

Step 4: The chart will now be inserted in the worksheet.

### Sessional Portion (Ms Excel)

CH - 1, 2, 3

~~Define the different types of charts.~~

\* Changing the chart style - This allows the user to change the style of the chart.

Step 1: Select the chart for which you want to change the chart style.

Step 2: On the Design Tab, in the Chart Style group, click on the More button to get all the available options.

Step 3: Select the desired style.

Step 4: The chart will now be updated with the new style.

\* Resizing the chart - This allows the user to change the height & width of chart.

Step 1: On the Format Tab, in the Size group, enter the size in the height & width group.

a) Create a  
a) Edit  
c) Find

b) Delete

## Printing a Worksheet

It is a feature of MS Excel which allows the user to print all or part of a worksheet or workbook.

- Step 1: Click on the File Tab to get backstage view
- Step 2: Choose the option Print in the left pane
- Step 3: The Print dialog box appears in the middle pane
- Step 4: Adjust the reqd. print settings & click on Print button.

H/w  
Pg - 1.39 to 1.41 (read)