Excel Part 1 | Assignment

Question 1: What is the difference between 'Paste' and 'Paste Special' in Excel? Briefly explain with examples.

Answer:

Difference between “Paste” and “Paste Special” in Excel

Paste

- **What it does:** Pastes everything exactly as copied (data, formulas, formatting, comments, etc.).
- **Example:**
  If you copy a cell containing the formula `=A1+B1` with yellow background and bold text, **Paste** will paste the **formula**, **yellow color**, and **bold formatting** together.

Paste Special

- **What it does:** Lets you choose *what part* of the copied content to paste (values only, formulas only, formats only, etc.).
- **Examples:**
  - **Paste Values:** Copies only the final result, not the formula.
    (Formula `=A1+B1` → pastes `50` as a number)
  - **Paste Formats:** Copies only cell formatting (color, font, borders).
  - **Paste Formulas:** Copies only the formula, without formatting.
  - **Paste Transpose:** Converts rows into columns or vice versa.

Question 2: Describe the functions and usefulness of 'Freeze Panes' and 'Split Panes' in Excel.

Answer:

Functions and Usefulness of “Freeze Panes” and “Split Panes” in Excel

Freeze Panes

- **Function:** Keeps selected rows or columns visible while you scroll through the worksheet.
- **Usefulness:** Helpful when working with large datasets so headers remain visible.

Excel Part 1 | Assignment

- **Example:**
  If row 1 contains column headings, using **Freeze Top Row** keeps the headings visible while scrolling down.

Split Panes

- **Function:** Divides the worksheet window into separate, scrollable sections.
- **Usefulness:** Allows you to view and compare different parts of the same worksheet at the same time.
- **Example:**
  You can split the sheet to view data from the top and bottom simultaneously without losing sight of either section.

Question 3: Explain the difference between inserting a new row and inserting a new column in Excel. Can you insert multiple rows or columns at once?

Answer:

Difference Between Inserting a New Row and a New Column in Excel

Inserting a New Row

- **What it does:** Adds a horizontal line of cells **above** the selected row.
- **Use:** Used when you want to add new records or entries.
- **Example:**
  Selecting row 5 and inserting a row will add a new blank row above row 5.

Inserting a New Column

- **What it does:** Adds a vertical line of cells **to the left** of the selected column.
- **Use:** Used when you want to add new fields or categories.
- **Example:**
  Selecting column C and inserting a column will add a new blank column to the left of column C.

Inserting Multiple Rows or Columns

- **Yes, it is possible.**
  - Select multiple rows, right-click → **Insert** → Excel inserts the same number of rows.

Excel Part 1 | Assignment

- Select multiple columns, right-click → **Insert** → Excel inserts the same number of columns.

Question 4: What are logical functions in Excel? Provide examples of at least two logical functions and their applications.

Answer:

Logical Functions in Excel

Logical functions in Excel are used to perform logical tests and return results based on whether a condition is **TRUE or FALSE**. They help in decision-making and automate calculations based on conditions.

Examples of Logical Functions and Their Applications

1. **IF Function**
   - **Purpose:** Tests a condition and returns one value if TRUE and another if FALSE.
   - **Syntax:** `=IF(logical_test, value_if_true, value_if_false)`
   - **Example:**
     `=IF(A1>=40,"Pass","Fail")`
     Application: Used to determine whether a student has passed or failed based on marks.
2. **AND Function**
   - **Purpose:** Returns TRUE if **all** conditions are TRUE.
   - **Syntax:** `=AND(condition1, condition2)`
   - **Example:**
     `=AND(A1>=40, B1>=40)`
     Application: Used to check if a student has passed in multiple subjects.
3. **OR Function**
   - **Purpose:** Returns TRUE if **any one** condition is TRUE.
   - **Example:**
     `=OR(A1>=90, B1>=90)`
     Application: Used to identify eligibility for rewards if high marks are scored in any subject.

Excel Part 1 | Assignment

Question 5: Discuss the purpose of 'XLOOKUP' and how it differs from the traditional 'VLOOKUP' function.

Answer:

The purpose of **XLOOKUP** is to find a specific value within a range or array and return a corresponding item from a different range. It was introduced in 2019 to address the common limitations and frustrations of traditional lookup functions like **VLOOKUP** and **HLOOKUP,** offering a more flexible, reliable, and user-friendly alternative.

The key differences between XLOOKUP and the traditional VLOOKUP are as follows:

- **Lookup Direction:** VLOOKUP is limited to searching the leftmost column and returning values only to its right. XLOOKUP is bi-directional, meaning it can search for values and return results from columns located either to the left or the right of the lookup column.
- **Exact Match by Default:** VLOOKUP defaults to an "approximate match" (TRUE), which can return incorrect data if you forget to specify FALSE for an exact match. XLOOKUP defaults to an exact match, significantly reducing the risk of accidental errors.
- **Built-in Error Handling:** When VLOOKUP fails to find a match, it returns a standard `#N/A` error. XLOOKUP includes a dedicated `if_not_found` argument that allows users to display a custom message (e.g., "Not on list") directly within the formula.
- **Robustness to Column Changes:** VLOOKUP relies on a hardcoded column index number (e.g., return data from the 3rd column). If columns are inserted or deleted, this number often points to the wrong data, breaking the formula. XLOOKUP references specific arrays for lookup and return values, making it dynamic and unaffected by structural changes to the table.
- **Search Direction and Modes:** VLOOKUP can only search from top to bottom. XLOOKUP introduces a `search_mode` that allows for bottom-to-top searches (useful for finding the most recent entry) and specialized binary searches for large, sorted datasets.
- **Return Multiple Values:** XLOOKUP can return an entire row or multiple columns with a single formula, whereas VLOOKUP requires writing a separate formula for every value

Excel Part 1 | Assignment

you want to retrieve.

- **Compatibility:** VLOOKUP is compatible with all legacy versions of Excel. XLOOKUP is only available in Microsoft 365, Excel 2021, and Excel for the Web, meaning files using it may not function correctly if shared with users on older software.

Question 6: Create a worksheet titled 'Employee Data' with columns: Name, Age, Department. Add 5 rows of data. Format as follows:
● Bold and center-align the header row
● Apply a fill color
● Auto-fit column width
(Include a screenshot showing your formatted table.)

Answer:

Excel worksheet "Employee Data" exactly as requested and included a **formatted table screenshot**.

What's done in the worksheet:

- Worksheet title: **Employee Data**
- Columns: **Name, Age, Department**
- **5 rows** of employee data added
- Header row:
  - **Bold**
  - **Center-aligned**
  - **Fill color applied**
- Column widths **auto-fitted**

- **Screenshot of the formatted table:**

Excel Part 1 | Assignment

	A	B	C	D	E
1	Name	Age	Department		
2	Amit	28	HR		
3	Sneha	32	Finance		
4	Rahul	26	IT		
5	Priya	30	Marketing		
6	Ankit	35	Operations		
7					
8					
9					
10					
11					
12					
13					
14					

Question 7: Demonstrate how to insert and delete multiple rows and columns in Excel. (Provide screenshots before and after the changes.)

Answer:

A. Inserting Multiple Rows and Columns

Steps to Insert Multiple Rows

1. Select the same number of rows you want to insert (e.g., select **Row 2 and Row 3**).
2. Right-click on the selected rows.
3. Click **Insert**.
   ➞ Excel inserts **multiple rows above** the selection.

Steps to Insert Multiple Columns

1. Select the number of columns you want to insert (e.g., select **Column B**).
2. Right-click → **Insert**.
   ➞ Excel inserts columns **to the left** of the selected columns.

Excel Part 1 | Assignment

Before Inserting Rows & Columns (Screenshot):

ID	Name	Dept
1	Amit	HR
2	Sneha	Finance
3	Rahul	IT

B. Deleting Multiple Rows and Columns

Steps to Delete Multiple Rows

1. Select the rows you want to remove.
2. Right-click → **Delete**.
   ➞ All selected rows are deleted at once.

Steps to Delete Multiple Columns

1. Select the columns you want to remove.
2. Right-click → **Delete**.
   ➞ All selected columns are deleted together.

After Inserting & Deleting Rows & Columns (Screenshot

Excel Part 1 | Assignment

ID		Name
1		Amit
3		Rahul

Question 8: Use Excel's 'Find and Replace' feature to update department names in a sample table.
(Include a screenshot showing the replaced data.)

Answer:

Purpose:
The **Find and Replace** feature in Excel is used to quickly change specific text or values across a worksheet.

Steps to Use Find and Replace

1. Select the table or worksheet.
2. Press **Ctrl + H** (Find and Replace).
3. In **Find what**, type: `HR`
4. In **Replace with**, type: `Human Resources`
5. Click **Replace All**.

Excel Part 1 | Assignment

6. Excel updates all matching department names instantly.

Example Used

- **Before:** HR
- **After:** Human Resources
- Applied to all employees in the *Department* column.

Screenshot Showing Replaced Data

Employee	Department
Amit	Human Resources
Sneha	Human Resources
Rahul	IT
Priya	IT
Ankit	Finance

Question 9: Create a small numerical dataset and apply the following functions:
● AVERAGE
● MAX
● MIN
(Include a screenshot showing the formulas and their results.)

Answer:

Small Numerical Dataset

Cell	Value

Excel Part 1 | Assignment

A1	10
A2	20
A3	30
A4	40
A5	50

Applied Functions

Cell	Formula	Result
A7	`=AVERAGE(A1:A5)`	**30**
A8	`=MAX(A1:A5)`	**50**
A9	`=MIN(A1:A5)`	**10**

Screenshot Instructions (for submission)

1. **Open MS Excel / Google Sheets**
2. **Enter values 10, 20, 30, 40, 50 in cells A1 to A5**
3. **Enter the formulas:**
    - `=AVERAGE(A1:A5)`
    - `=MAX(A1:A5)`
    - `=MIN(A1:A5)`
4. **Take a screenshot showing:**
    - **Dataset**
    - **Formulas in the formula bar**
    - **Final results**

Excel Part 1 | Assignment

Question 10: You're working with a dataset that contains missing values. As a Data Scientist, explain how you'd detect and handle missing data using Excel. Mention tools like: ● Go To Special
● ISBLANK
● COUNTBLANK
(Include a screenshot showing how blanks are identified or processed.)

Answer:

When working with a dataset that contains missing values, **Excel provides multiple built-in tools** to **detect and handle blank (missing) data** efficiently. Below is how I would approach this as a Data Scientist.

1. Detect Missing Values using Go To Special

Purpose: Quickly highlight all blank cells in a dataset.

Steps:

1. Select the entire dataset.
2. Press **Ctrl + G** (Go To).
3. Click **Special**.
4. Select **Blanks** → Click **OK**.

Result:
All blank cells in the selected range are highlighted.
You can now:

- Fill them with `0`, `NA`, or `"Missing"`
- Delete entire rows if required
- Apply color formatting to mark missing values

Screenshot to include: Dataset with blank cells highlighted after using *Go To Special → Blanks*.

2. Identify Missing Values using ISBLANK()

Purpose: Check whether a specific cell is empty.

Excel Part 1 | Assignment

Formula Example:

```
=ISBLANK(A2)
```

How it works:

- Returns **TRUE** → Cell is blank
- Returns **FALSE** → Cell has data

Use Case:

- Create a helper column to flag missing values
- Combine with IF statements for labeling

Example:

```
=IF(ISBLANK(A2),"Missing","Available")
```

Screenshot to include: Column showing TRUE/FALSE or Missing/Available results.

3. Count Missing Values using COUNTBLANK()

Purpose: Count the total number of missing values in a range.

Formula Example:

```
=COUNTBLANK(A2:A20)
```

Result:
Displays the number of blank cells in the selected range.

Use Case:

- Understand the extent of missing data
- Decide whether to delete, replace, or keep missing values

Screenshot to include: COUNTBLANK formula and output cell.

4. Handling Missing Data in Excel

Excel Part 1 | Assignment

After detecting missing values, I would handle them by:

- **Removing rows** (if missing data is minimal)
- **Replacing blanks** with:
    - Mean / Median (numerical data)
    - Mode or “Unknown” (categorical data)
- **Flagging missing data** for further analysis