1. What does DAX stand for?

a) Data Analysis Extension
b) Data Analysis Expressions
c) Data Aggregation Expressions
d) Data Automation Extensions

Answer: b) Data Analysis Expressions
Explanation: DAX stands for **Data Analysis Expressions**, a collection of functions, operators, and constants used to perform calculations in Power BI, Excel, and SSAS.

---

2. Which of the following functions returns the first non-blank value in a column?

a) FIRST
b) EARLIER
c) FIRSTNONBLANK
d) ISNONBLANK

Answer: c) FIRSTNONBLANK
Explanation: The **FIRSTNONBLANK** function returns the first non-blank value in a specified column, considering optional filters.

---

3. Which DAX function is used to calculate a running total?

a) SUM
b) CALCULATE
c) SUMX
d) TOTALYTD

Answer: d) TOTALYTD
Explanation: The **TOTALYTD** function calculates the year-to-date total of a measure or column based on a date column.

---

4. What will the formula `=SUMX(FILTER(Sales, Sales[Region] = "North"), Sales[Amount])` do?

a) Calculate the total amount for all regions.
b) Filter the "North" region and sum the "Amount" column.
c) Sum all regions except "North."
d) Calculate the count of sales in the "North" region.

Answer: b) Filter the "North" region and sum the "Amount" column.
Explanation: The **FILTER** function selects rows where `Sales[Region] = "North"`, and **SUMX** iterates over these rows to calculate the sum of the `Sales[Amount]` column.

---

5. Which DAX function retrieves a single value for the current row context?

a) RELATED
b) EARLIER
c) LOOKUPVALUE
d) VALUES

Answer: a) RELATED
Explanation: The **RELATED** function is used in calculated columns to fetch a value from a related table, assuming a relationship exists.

---

6. What is the output of `DISTINCT(Products[Category])`?

a) Returns all values from the column.
b) Returns distinct values from the column.
c) Returns null values.
d) Returns a total count of the column.

Answer: b) Returns distinct values from the column.
Explanation: The **DISTINCT** function eliminates duplicates and provides a unique list of values from the column.

---

7. Which DAX function is used to create dynamic filters?

a) ALL
b) FILTER
c) SWITCH
d) CALCULATE

Answer: b) FILTER
Explanation: The **FILTER** function allows you to create row-level dynamic filters for tables or columns.

---

8. What does the `ALL` function do in DAX?

a) Removes all filters.
b) Adds filters.
c) Deletes rows.
d) Calculates all columns.

Answer: a) Removes all filters.
Explanation: The **ALL** function removes any filters applied to a column or table, often used for calculating total sums or averages.

---

9. Which DAX function evaluates an expression based on a condition?

a) IF
b) SWITCH
c) BOTH
d) AVERAGE

Answer: b) SWITCH
Explanation: The **SWITCH** function evaluates an expression against multiple conditions and returns corresponding results.

---

10. What is the purpose of the `EARLIER` function in DAX?

a) Evaluates earlier rows of a table.
b) Allows nested row context access.
c) Creates a time-based filter.
d) Fetches data from related tables.

Answer: b) Allows nested row context access.
Explanation: The **EARLIER** function retrieves values from an outer row context, useful in calculated columns or measures.

---

11. What will `RANKX(Table, Table[Amount])` return?

a) Total sum of the Amount column.
b) Rank of each row based on the Amount column.
c) Count of distinct rows in the Amount column.
d) Average of the Amount column.

Answer: b) Rank of each row based on the Amount column.
Explanation: The **RANKX** function assigns a rank to each row in the table based on the value of `Table[Amount]`.

---

12. Which function calculates the difference between two dates?

a) DATEDIFF
b) DATEADD
c) DATEVALUE
d) CALCULATEDATE

Answer: a) DATEDIFF
Explanation: The **DATEDIFF** function calculates the difference between two dates in terms of days, months, years, etc., as specified.

---

13. Which DAX function can return the year from a date column?

a) YEARVALUE
b) FORMAT
c) YEAR
d) CALENDAR

Answer: c) YEAR
Explanation: The **YEAR** function extracts the year component from a date value.

---

14. What does the following DAX expression do?

```
CALCULATE(SUM(Sales[Amount]), Sales[Region] = "West")
```

a) Summarizes the total sales.
b) Filters only the "West" region and sums the sales amount.
c) Removes all filters.
d) Returns distinct sales amounts for "West."

Answer: b) Filters only the "West" region and sums the sales amount.
Explanation: The **CALCULATE** function modifies the context by applying the filter `Sales[Region] = "West"` and then calculates the sum of `Sales[Amount]`.

---

15. What is the output of `BLANK()` in DAX?

a) Returns zero.
b) Returns an empty string.
c) Returns a blank (null) value.
d) Returns "N/A".

Answer: c) Returns a blank (null) value.
Explanation: The **BLANK()** function produces a blank value equivalent to null in DAX.

---

16. Which function combines values into a single string?

a) CONCATENATE
b) COMBINE
c) JOIN
d) CONCATENATEX

Answer: d) CONCATENATEX
Explanation: CONCATENATEX concatenates values in a table or expression into a single string, separated by a specified delimiter.

**17. What is the purpose of the HASONEVALUE function?

a) Check if a table has more than one row.
b) Check if a column contains only one distinct value.
c) Return the first value of a column.
d) Validate data types in a table.

Answer: b) Check if a column contains only one distinct value.
Explanation: HASONEVALUE returns TRUE if a column contains exactly one distinct value, commonly used in conditional logic.

---

18. How do you calculate a column’s distinct count?

a) COUNT
b) COUNTA
c) COUNTX
d) DISTINCTCOUNT

Answer: d) DISTINCTCOUNT
Explanation: DISTINCTCOUNT calculates the number of unique (distinct) values in a column.

---

19. Which DAX function ignores all filters on a table or column?

a) CALCULATE
b) ALLEXCEPT

c) REMOVEFILTERS
d) ALL

Answer: d) ALL
Explanation: ALL removes all filters from the specified table or column to return a complete dataset.

---

20. What will `ISBLANK()` return when applied to an empty column?

a) TRUE
b) FALSE
c) NULL
d) Error

Answer: a) TRUE
Explanation: ISBLANK checks whether a value is blank (null) and returns TRUE if it is.

---

21. How do you calculate the moving average in DAX?

a) AVERAGEX
b) SUMMARIZE
c) ROLLINGAVG
d) CALCULATE with FILTER

Answer: d) CALCULATE with FILTER
Explanation: Moving averages can be calculated by using **CALCULATE** to apply a time-based filter to sum or average values over a period.

---

22. What is the result of the DAX formula: `=MAX(Sales[Amount])`?

a) The sum of all sales amounts.
b) The average sales amount.
c) The highest sales amount.
d) The minimum sales amount.

Answer: c) The highest sales amount.
Explanation: MAX returns the largest value from a column or expression.

---

23. What will `COUNTROWS(Table)` return?

a) Total number of columns in the table.
b) Total number of rows in the table.
c) Total number of blank rows in the table.
d) Total number of unique values in the table.

Answer: b) Total number of rows in the table.
Explanation: COUNTROWS counts the number of rows present in the table.

---

24. How do you remove a specific filter from a column in DAX?

a) REMOVEFILTERS
b) ALLEXCEPT
c) CALCULATE
d) VALUES

Answer: a) REMOVEFILTERS
Explanation: REMOVEFILTERS clears filters from the specified columns, restoring the full context.

---

25. What does `DIVIDE(x, y)` do in DAX?

a) Multiplies x and y.
b) Divides x by y and returns the result.
c) Divides x by y with error handling for division by zero.
d) Adds x and y.

Answer: c) Divides x by y with error handling for division by zero.
Explanation: DIVIDE safely divides two numbers, returning an alternative value (e.g., BLANK) if the denominator is zero.

---

26. Which DAX function would you use to return the last date in a date column?

a) LASTDATE
b) ENDDATE
c) MAX
d) FINALDATE

Answer: a) LASTDATE
Explanation: The **LASTDATE** function retrieves the last date from a date column, respecting any applied filters.

---

27. What does the following DAX expression return?

```
CALCULATE(SUM(Sales[Amount]), REMOVEFILTERS(Sales[Category]))
```

a) Total sales amount after removing the Category filter.
b) Total sales for the "Category" column only.
c) Filters all rows where Category is blank.
d) Removes all filters from the dataset.

Answer: a) Total sales amount after removing the Category filter.
Explanation: The **REMOVEFILTERS** function removes any filters on the `Sales[Category]` column, and **CALCULATE** then computes the total sum.

---

28. Which function would you use to create a calculated table?

a) SUMMARIZE
b) CALCULATETABLE
c) ADDCOLUMNS
d) ALL

Answer: b) CALCULATETABLE
Explanation: The **CALCULATETABLE** function evaluates a table expression in a modified filter context, creating a new calculated table.

---

29. What does `UNION(Table1, Table2)` do?

a) Combines rows from both tables, removing duplicates.
b) Combines rows from both tables, keeping all rows.
c) Joins the tables based on relationships.
d) Returns a distinct list of columns from both tables.

Answer: b) Combines rows from both tables, keeping all rows.
Explanation: UNION appends rows from `Table2` to `Table1`, including duplicates.

---

30. How does the `USERELATIONSHIP` function work in DAX?

a) Disables a relationship.
b) Activates an inactive relationship for a calculation.
c) Creates a new relationship dynamically.
d) Filters rows based on relationships.

Answer: b) Activates an inactive relationship for a calculation.
Explanation: USERELATIONSHIP allows DAX calculations to use an inactive relationship instead of the default active one.

---

31. What does `VALUES(Table[Column])` return?

a) All rows in the column.
b) Distinct values in the column.
c) Filtered rows in the column.
d) Count of values in the column.

Answer: b) Distinct values in the column.
Explanation: The **VALUES** function provides a one-column table containing the unique values of the specified column.

---

32. Which DAX function is useful for creating a custom time intelligence calculation?

a) TIMEVALUE
b) DATESMTD
c) DATESBETWEEN
d) CALENDARAUTO

Answer: c) DATESBETWEEN
Explanation: DATESBETWEEN returns a table of dates within a specified range, useful for custom time-based calculations.

---

33. What does `ALLSELECTED` do in DAX?

a) Removes all filters in the model.
b) Removes filters applied at the visualization level.
c) Retains filters applied at the report level.
d) Keeps only selected rows in a table.

Answer: b) Removes filters applied at the visualization level.
Explanation: ALLSELECTED removes filters at the visual level while keeping the report-level filters intact.

---

34. How do you retrieve the number of days in a specific month using DAX?

a) DAYSINMONTH
b) EOMONTH
c) DATEADD
d) MONTHLENGTH

Answer: b) EOMONTH
Explanation: The **EOMONTH** function calculates the end of the month, and by subtracting the start date, you can determine the number of days.

---

35. Which function finds the average of a column in a table?

a) AVERAGEA
b) AVERAGE
c) SUMX
d) COUNTROWS

Answer: b) AVERAGE
Explanation: AVERAGE calculates the mean of numeric values in a column.

---

36. What does `RELATEDTABLE(TableName)` return?

a) A single column from the related table.
b) The first related row in the table.
c) All rows from the related table.
d) Blank if no relationship exists.

Answer: c) All rows from the related table.
Explanation: RELATEDTABLE retrieves all rows from a related table based on existing relationships.

---

37. What will `SUMMARIZE(Sales, Sales[Region], "Total", SUM(Sales[Amount]))` do?

a) Summarizes sales data by Product.
b) Groups sales by Region and calculates total sales for each group.
c) Summarizes sales without grouping.
d) Returns unique sales values for each product.

Answer: b) Groups sales by Region and calculates total sales for each group.
Explanation: SUMMARIZE groups data by the specified column(s) and applies an aggregation function.

---

38. What will the expression `=IF(Sales[Amount] > 500, "High", "Low")` return?

a) Rows where sales are greater than 500.
b) High for amounts greater than 500, Low otherwise.
c) Total sales greater than 500.
d) Error if sales amount is less than 500.

Answer: b) High for amounts greater than 500, Low otherwise.
Explanation: The **IF** function checks the condition and returns values accordingly.

---

39. Which DAX function retrieves the percentile of a column?

a) RANKX
b) PERCENTILE
c) PERCENTILEX.INC
d) PERCENTILE.INC

Answer: c) PERCENTILEX.INC
Explanation: PERCENTILEX.INC calculates the inclusive percentile value of a column or table expression.

---

40. What is the purpose of `NATURALINNERJOIN`?

a) Performs an inner join between two tables with matching columns.
b) Combines two tables without duplication.
c) Returns unmatched rows from both tables.
d) Filters rows based on primary key matches.

Answer: a) Performs an inner join between two tables with matching columns.
Explanation: NATURALINNERJOIN merges tables where column names and data types match.

---

41. What does the `SAMEPERIODLASTYEAR` function do?

a) Compares values to the same period of the previous year.
b) Calculates year-to-date totals.
c) Filters data for the same date range in the current year.
d) Removes filters for the last year's data.

Answer: a) Compares values to the same period of the previous year.
Explanation: The **SAMEPERIODLASTYEAR** function shifts the date range by one year, useful for year-over-year comparisons.

---

42. Which function calculates the sum of sales for the last 6 months?

a) DATEADD with CALCULATE
b) LASTNMONTHS
c) DATESINPERIOD
d) PREVIOUSMONTH

Answer: c) DATESINPERIOD
Explanation: DATESINPERIOD returns a date range based on a specified start date and interval, which can be used with CALCULATE for aggregations like sums.

---

43. What does the following formula calculate?

```
CALCULATE(SUM(Sales[Amount]), PREVIOUSQUARTER(Dates[Date]))
```

a) Total sales for the previous year.
b) Total sales for the current quarter.
c) Total sales for the previous quarter.
d) Total sales excluding the current quarter.

Answer: c) Total sales for the previous quarter.
Explanation: The **PREVIOUSQUARTER** function shifts the filter context to the prior quarter, and **CALCULATE** computes the sum of sales within that context.

**44. What is the role of CROSSFILTER in DAX?

a) Disables all relationships in the model.
b) Defines the relationship type between two columns.
c) Filters rows based on matching values in a related table.
d) Changes the filter direction between related tables.

Answer: d) Changes the filter direction between related tables.
Explanation: The **CROSSFILTER** function adjusts the relationship's filter direction (e.g., from single to both).

---

45. What does `ROLLUPADDISSUBTOTAL` do in DAX?

a) Adds subtotals for specific grouping levels.
b) Removes all subtotal calculations.
c) Returns the count of rows in each group.
d) Combines data without summarization.

Answer: a) Adds subtotals for specific grouping levels.
Explanation: The **ROLLUPADDISSUBTOTAL** function introduces subtotals for grouping levels in a summarized dataset.

---

46. How does `CLOSINGBALANCEMONTH` function work?

a) Calculates the sum of all sales at the end of the month.
b) Returns the last value of a column for the last date of the month.
c) Filters data for the last 30 days.
d) Calculates the total balance for the month.

Answer: b) Returns the last value of a column for the last date of the month.
Explanation: The **CLOSINGBALANCEMONTH** function retrieves the closing balance of a measure or column on the last date in a month.

---

47. Which DAX function determines the count of rows in a relationship context?

a) RELATED
b) COUNTROWS
c) CROSSJOIN
d) RELATEDTABLE

Answer: b) COUNTROWS
Explanation: COUNTROWS counts the rows in a specified table, often used in the context of relationships.

---

48. How does `PARALLELPERIOD` differ from `DATEADD` in DAX?

a) PARALLELPERIOD shifts context to a specific parallel period, while DATEADD allows shifting by any interval.
b) PARALLELPERIOD works only with years, while DATEADD works with days.
c) PARALLELPERIOD removes filters, while DATEADD does not.
d) Both functions perform the same operation.

Answer: a) PARALLELPERIOD shifts context to a specific parallel period, while DATEADD allows shifting by any interval.

Explanation: PARALLELPERIOD moves the context to a parallel timeframe (e.g., one month back), while **DATEADD** provides more flexibility in specifying the interval.

---

49. Which DAX function applies multiple filters to a single column?

a) CALCULATE
b) FILTER
c) TREATAS
d) ALL

Answer: c) TREATAS
Explanation: TREATAS applies a table of values as a filter on another column, enabling advanced cross-filtering.

---

50. How does `GROUPBY` differ from `SUMMARIZE`?

a) GROUPBY creates intermediate tables; SUMMARIZE directly calculates aggregates.
b) GROUPBY is used for complex calculations, SUMMARIZE for simple grouping.
c) GROUPBY creates an unfiltered table; SUMMARIZE applies filters.
d) Both perform the same operation.

Answer: a) GROUPBY creates intermediate tables; SUMMARIZE directly calculates aggregates.
Explanation: GROUPBY allows creating tables for more complex calculations using **ADDGROUPINGCOLUMN**, while **SUMMARIZE** is more direct for grouping and aggregation.