Power BI Practical Exam – Extended Cheat Sheet

This document is designed as a practical, copy-paste friendly reference for OLAP → Star Schema modeling, Power Query transformations, DAX, and visualization patterns. You can upload this file to GitHub and keep it open during the exam.

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1. OVERALL WORKFLOW (ALWAYS FOLLOW THIS ORDER)

1. Load data → Power Query
2. Append / Merge tables
3. Build Star Schema (1 Fact + Dimensions)
4. Disable Load for helper tables
5. Load to Power BI
6. Create relationships
7. Create Date table
8. Add calculated columns
9. Create measures
10. Build visuals

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2. WHEN TO USE APPEND VS MERGE

Append (UNION)

Use when tables have same structure and need to be stacked vertically.

Example: - Sales2024 - Sales2025

Result → One Sales table

Merge (JOIN)

Use when combining columns from different tables using a key.

Example: - Sales + Returns - Sales + Products

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3. MERGING SALES WITH RETURNS (LEFT JOIN)

Power Query: - Select Sales table - Merge Queries - Choose Returns table - Join Column: SaleID / OrderID - Join Type: Left Outer - Expand: - ReturnDate - ReturnQty - ReturnAmount

Result: Every sale row contains return info (null if not returned)

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4. HANDLING NULL VALUES

Replace in Power Query:

ReturnQty → Replace null → 0 ReturnAmount → Replace null → 0 City → Replace null → "Unknown" Category → Replace null → "Unknown"

Goal: No nulls in Fact or Dimensions

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5. STAR SCHEMA STRUCTURE

FACT TABLE

 • SaleID
 • ProductID
 • CustomerID
 • StoreID
 • SaleDate
 • Quantity
 • UnitPrice
 • TotalAmount
 • ReturnDate
 • ReturnQty
 • ReturnAmount

DIMENSIONS

DimProduct: - ProductID - ProductName - Category

DimCustomer: - CustomerID - CustomerName - City

DimStore: - StoreID - StoreName - State

DimDate: - Date - Year - Month - Day

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6. DISABLE LOAD (VERY IMPORTANT)

In Power Query: Right click helper tables → Disable Load

Only these should load: - Fact - Dimensions

7. DATE TABLE

Modeling → New Table

```
DateTable =
CALENDAR (DATE(2020,1,1), DATE(2026,12,31))
```

Add columns:

```
Year = YEAR(DateTable[Date])
Month = FORMAT(DateTable[Date],"MMM")
MonthNum = MONTH(DateTable[Date])
Day = DAY(DateTable[Date])
```

Relationship: Fact[SaleDate] → DateTable[Date]

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8. CALCULATED COLUMNS (FACT)

Year

```
Year = YEAR(Fact[SaleDate])
```

Month

```
Month = MONTH(Fact[SaleDate])
```

Days Between Sale and Return

```
DaysToReturn =
IF(
 ISBLANK(Fact[ReturnDate]),
 BLANK(),
 DATEDIFF(Fact[SaleDate], Fact[ReturnDate], DAY)
)
```

Return Amount Column

```
ReturnAmountCalc = Fact[ReturnQty] * Fact[UnitPrice]
```

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9. CORE MEASURES (COPY & PASTE)

Total Sales

```
Total Sales = SUM(Fact[TotalAmount])
```

Total Returns

```
Total Returns = SUM(Fact[ReturnAmountCalc])
```

Return Percentage

```
Return % = DIVIDE([Total Returns],[Total Sales])
```

Average Return Days

```
Avg Return Days = AVERAGE(Fact[DaysToReturn])
```

Orders Count

```
Orders Count = COUNT(Fact[SaleID])
```

Current Year Sales

```
Current Year Sales =
CALCULATE(
 [Total Sales],
 YEAR(DateTable[Date]) = YEAR(TODAY())
)
```

Previous Year Sales

```
Previous Year Sales =
CALCULATE(
 [Total Sales],
 YEAR(DateTable[Date]) = YEAR(TODAY())-1
)
```

10. VISUAL PATTERNS

Sales by Product

Axis → ProductName Values → Total Sales

Sales by Customer

Axis → CustomerName Values → Total Sales

Sales by City / State

Legend → City or State Values → Total Sales

Sales by Store

Axis → StoreName Values → Total Sales

Sales Over Time

Axis → DateTable[Month] Values → Total Sales

11. REQUIRED VISUAL TYPES

- Card
- Column Chart
- Bar Chart
- Pie or Donut
- Table
- Matrix

12. REPORT PAGE STRUCTURE

Page 1 – Summary

Cards: - Total Sales - Total Returns - Return % - Orders Count

Charts: - Sales by Month - Sales by Product

Slicers: - Year - Category - Store

Page 2 – Customers

Bar: Customer → Total Sales Table: Customer, Orders Count, Return %

Page 3 – Products

Column: Product → Total Sales Matrix: Product x City → Return %

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13. INSIGHT IDEAS (WRITE ANY ONE)

- Product X has highest return rate in City Y
- Category A generates highest revenue
- Store B has lowest average return days
- Returns spike in certain months

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14. QUICK GOOGLE QUERIES

Power BI merge two tables left join Power BI star schema example Power BI date table dax DAX days between two dates DAX return percentage

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15. TIME MANAGEMENT

0–20 min → Power Query 20–40 min → Model + Date table 40–60 min → Columns + Measures 60–80 min → Visuals 80–90 min → Formatting

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16. GOLDEN RULE

Working solution > Perfect solution

If formula runs without error → Move on.

Good luck on your exam 🚀