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| **Skills Being Measured**  This exam measures your ability to accomplish the technical tasks listed below.The percentages indicate the relative weight of each major topic area on the exam.The higher the percentage, the more questions you are likely to see on that content area on the exam.  The information after “This objective may include but is not limited to” is intended to further define or scope the objective by describing the types of skills and topics that may be tested for the objective. However, it is not an exhaustive list of skills and topics that could be included on the exam for a given skill area. You may be tested on other skills and topics related to the objective that are not explicitly listed here. |

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| **Implementing Tables and Views (14 percent)**   * Create and alter tables.  This objective may include but is not limited to: computed and persisted columns; schemas; scripts to deploy changes to multiple environments, for example, dev, test, production; manage permissions (GRANT, DENY, REVOKE) * Create and alter views.  This objective may include but is not limited to: WITH ENCRYPTION; WITH SCHEMABINDING; WITH CHECK OPTION; manage permissions (GRANT, DENY, REVOKE) * Create and alter indexes.  This objective may include but is not limited to: filtered, included columns, unique, clustered, non-clustered, FILL FACTOR; CREATE STATISTICS; indexing views, compression * Create and modify constraints.  This objective may include but is not limited to: PRIMARY KEY, FOREIGN KEY, UNIQUE, CHECK, cascading referential integrity, enabling/disabling, NOCHECK; SET IDENTITY\_INSERT * Implement data types.  This objective may include but is not limited to: FILESTREAM; spatial, structured, and semi-structured; collations * Implement partitioning solutions.  This objective may include but is not limited to: partitioned tables and indexes (constraints, partition functions, partition schemes, MERGE, SPLIT, SWITCH); distributed partitioned views (constraints, linked servers)   **Implementing Programming Objects (16 percent)**   * Create and alter stored procedures.  This objective may include but is not limited to: table-valued parameters (TVPs), EXECUTE AS, RECOMPILE, parameter direction (output); WITH ENCRYPTION; manage permissions (GRANT, DENY, REVOKE) * Create and alter user-defined functions (UDFs).  This objective may include but is not limited to: WITH SCHEMABINDING, EXECUTE AS; manage permissions (GRANT, DENY, REVOKE) * Create and alter DML triggers.  This objective may include but is not limited to: INSERTED, DELETED, INSTEAD OF, EXECUTE AS * Create and alter DDL triggers.  This objective may include but is not limited to: enabling/disabling; return event data * Create and deploy CLR-based objects.  This objective may include but is not limited to: permission sets (SAFE, UNSAFE, EXTERNAL\_ACCESS), SET TRUSTWORTHY * Implement error handling.  This objective may include but is not limited to: TRY/CATCH, RAISERROR, retrieving error information, custom error messages, @@ERROR * Manage transactions.  This objective may include but is not limited to: BEGIN TRANSACTION, COMMIT, ROLLBACK, SET TRANSACTION ISOLATION LEVEL, named transactions   **Working with Query Fundamentals (21 percent)**   * Query data by using SELECT statements.  This objective may include but is not limited to: LIKE, WHERE, ORDER BY, INTO * Modify data by using INSERT, UPDATE, and DELETE statements.  This objective may include but is not limited to: row constructors, DELETE FROM, UPDATE FROM, TRUNCATE TABLE * Return data by using the OUTPUT clause.  This objective may include but is not limited to: INSERTED, DELETED, INTO * Modify data by using MERGE statements.  This objective may include but is not limited to: INSERTED, DELETED, OUTPUT * Implement aggregate queries.  This objective may include but is not limited to: built-in aggregate functions, GROUPING SETS, GROUP BY, HAVING * Combine datasets.  This objective may include but is not limited to: CROSS APPLY, OUTER APPLY, all join types; UNION, UNION ALL, INTERSECT, EXCEPT * Apply built-in scalar functions.  This objective may include but is not limited to: CAST and CONVERT; REPLACE; LEN and DATALENGTH; PATINDEX and CHARINDEX   **Applying Additional Query Techniques (15 percent)**   * Implement subqueries.  This objective may include but is not limited to: simple, correlated, scalar, list, table valued * Implement CTE (common table expression) queries.  This objective may include but is not limited to: recursive, non-recursive * Apply ranking functions.  This objective may include but is not limited to: RANK, PARTITION BY, DENSE\_RANK, OVER, ROW\_NUMBER, NTILE * Control execution plans.  This objective may include but is not limited to: table hints, query hints * Manage international considerations.  This objective may include but is not limited to: collations, defining custom errors, filtering data, sort order, nvarchar, database collation, column collation   **Working with Additional SQL Server Components (10 percent)**   * Integrate Database Mail. * Implement full-text search.  This objective may include but is not limited to: CONTAINS, CONTAINSTABLE, FREETEXT, FREETEXTTABLE, STOPLIST * Implement scripts by using Windows PowerShell and SQL Server Management Objects (SMOs).  This objective may include but is not limited to: cmdlets * Implement Service Broker solutions.  This objective may include but is not limited to: services, queues, messages, message types, message validation, contracts, activation procedures, routes * Track data changes.  This objective may include but is not limited to: change tracking; database audit specification; CHANGETABLE, Change Data capture   **Working with XML Data (12 percent)**   * Retrieve relational data as XML.  This objective may include but is not limited to: FOR XML * Transform XML data into relational data.  This objective may include but is not limited to: OPENXML, sp\_xml\_preparedocument, sp\_xml\_removedocument * Query XML data.  This objective may include but is not limited to: XQUERY, XPATH * Manage XML data.  This objective may include but is not limited to: XML datatype, XML indexes, XML schema collections   **Gathering Performance Information (11 percent)**   * Capture execution plans.  This objective may include but is not limited to: graphical execution plans; SHOWPLAN, index details in Query Plans * Gather trace information by using the SQL Server Profiler. * Collect output from the Database Engine Tuning Advisor.  This objective may include but is not limited to: prepare a workload * Collect information from system metadata.  This objective may include but is not limited to: Dynamic Management Views (DMVs), catalog views |