Level 5 Diploma in Information Technology (103)
127 Credits

Unit: Microsoft Access	**Guided Learning Hours:** 240
Exam Paper No.: 5	**Number of Credits**: 24
Prerequisites: Familiarity with Windows, mouse and keyboarding skills.	**Corequisites:** A pass or higher in Certificate in Information Systems.

Aim: Most organisations maintain and manage large amounts of information. One of the most efficient and powerful information management computer applications is the relational database. Information can be stored, linked, and managed using a single relational database application and its associated tools. In this unit, learners will be introduced to the concept of the relational database by using the Microsoft Access relational database application and its information management tools. This unit enable learners to learn the operations of the Access database program to perform day-to-day responsibilities, and understand the advantages that a relational database program can bring to business processes. Learners will learn how to create new databases, design tables and create queries. Information will also be presented on how to import records from external sources such as an Excel workbook and how to copy records from one table to another through the use of adding records to a table by using an append query.

Required Materials: Recommended Learning Resources.	**Supplementary Materials:** Lecture notes and tutor extra reading recommendations.

Special Requirements: Significant hands-on labs using Microsoft Access.

Intended Learning Outcomes:	Assessment Criteria:
1 Understand Microsoft database architecture; the types of objects and components of a database.	1.1 Define the terms field, record, table, and database.
	1.2 Identify the Access database objects and data types.
	1.3 Demonstrate how to add, edit, and delete records within a table.
	1.4 Identify how to use existing forms and reports.
	1.5 Explain the importance of data validation in maintaining a table.
	1.6 Explore how to apply a filter by form or selection.
	1.7 Identify how to sort a table on one or more fields.
	1.8 Describe examples of one-to-one, one-to-many and many-to-many database relationships.
	1.9 Explain how changes in one table of a relational database affect other the tables in the database.
	1.10 Demonstrate how to enter field names and records in a table datasheet.
	1.11 Demonstrate how to create and save a table in Datasheet view.
	1.12 Identify the components of the Microsoft Access window.
2 The process of building a database, table relationships, sorting, hiding and unhiding columns, adding, deleting records techniques and designing forms.	2.1 Explain in general terms how to design a table.
	2.2 Identify several data types and the associated properties.
	2.3 Demonstrate how to set the primary key of a table.

		2.4	Define how to use the Table Wizard to create a table and modify a table in Design view.
		2.5	Analyse how data validation is implemented in a table design.
		2.6	Demonstrate how to use the Form Wizard to create a form; modify a form in Design view.
		2.7	Distinguish between a bound control, an unbound control, and a calculated control.
		2.8	Identify how to add a combo box and command buttons to a form.
		2.9	Explain how to use a form to add, edit, and delete records in the underlying table.
3	Data vs information; the process of maintaining and querying an Access database; producing reports and queries in Access.	3.1	Analyse the reports available through the Report Wizard.
		3.2	Define how to list the sections in a report.
		3.3	Identify how to use conditional formatting in a report.
		3.4	Differentiate between a query and a table; define a dynaset.
		3.5	Identify how to use the design grid to create and modify a select query.
		3.6	Explain the use of multiple criteria rows in a query.
		3.7	Demonstrate how to use concatenation to combine fields in a query or report.
		3.8	Demonstrate how to use an immediate **If statement** to create a calculated control.
		3.9	Define an action query.
		3.10	Identify how to create a crosstab query.
4	Relational database management and how external data is imported into Access.	4.1	Demonstrate how to import data from an Excel workbook for inclusion in an Access database
		4.2	Demonstrate how to use the Relationships window to create a one-to-one relationship; define referential integrity.
		4.3	Demonstrate how to create a report that contains a relationships diagram
		4.4	Define how to create and modify a multiple-table select query.
		4.5	Define how to create a totals query.
		4.6	Identify how to use Microsoft Graph to create a chart for inclusion in a report.
		4.7	Identify how to create a pivot table and associated pivot chart.
		4.8	Explain how to create and modify a switchboard.
		4.9	Demonstrate the object dependencies that exist within a database.
		4.10	Illustrate how to compact and repair a database; back up a database.
5	Referential integrity, subforms, dynasets	5.1	Distinguish between a primary key and a

including identifying the similarities between forms and reports with respect to the underlying controls.	5.2	Define referential integrity.
	5.3	Define how to use the Relationships window to create a one-to-many relationship.
	5.4	Explain how the AutoNumber field type simplifies data entry.
	5.5	Distinguish between a main form and a subform.
	5.6	Define how to create a multiple-table query, then use the query to create a report.
	5.7	Outline how to create a main form with linked subforms.
6 Using Advanced Access relationships to perform aggregate functions and using the Get External Data command to add tables from another database.	6.1	Define how to use the AutoNumber field type as the primary key for a new record.
	6.2	Explain the field types required when an AutoNumber field is in a relationship.
	6.3	Identify how to implement a many-to-many relationship in Access.
	6.4	Demonstrate how to use the Cascade Update and Cascade Delete options in a relationship.
	6.5	Evaluate how to create a main form and subform based on a query.
	6.6	Define how to create a parameter query.
	6.7	Demonstrate how to use aggregate functions in a select query to perform calculations on groups of records.
7 Building applications using the switchboard manager; macros and using the Link Tables command to associate tables in one database with objects in a second database.	7.1	Demonstrate how to use the Switchboard Manager to create a multiple-level switchboard.
	7.2	Identify how macros automate an application.
	7.3	Explain the special role of the AutoExec macro.
	7.4	Explain how prototyping facilitates the development of an application.
	7.5	Demonstrate how to use the Unmatched Query Wizard and explain its significance.
	7.6	Demonstrate how to create a macro group.
8 Enhancing an application using Visual Basic for Applications (VBA) and creating procedures to facilitate data entry through keyboard shortcuts.	8.1	Explain the relationship of VBA to Microsoft Office.
	8.2	Explore how to create an event procedure.
	8.3	Analyse the VBA editor.
	8.4	Distinguish between the Procedure view and the Full Module view.
	8.5	Define how to create a combo box to locate a record on a form.
	8.6	Identify the parameters associated with the MsgBox function.
	8.7	Demonstrate how to create a procedure to display application-specific error messages.

	8.8	Identify several types of data validation and various ways of implementation.
Methods of Evaluation: A 2½-hour written examination paper with five essay questions, each carrying 20 marks. Candidates are required to answer all questions. Candidates also undertake project/coursework in Access with a weighting of 100%.		

Recommended Learning Resources:
Microsoft Access

Text Books	• Microsoft® Office Access Inside Out. ISBN-10: 0735623252. • Microsoft® Office Access Step by Step. ISBN-10: 0735615179 • New Perspectives on Microsoft Office Access, Comprehensive (New Perspectives) by Joseph J. Adamski and Kathy T. Finnegan. ISBN-10: 142390589X • Special Edition Using Microsoft Office Access by Roger Jennings. ISBN-10: 0789735970
Study Manuals	BCE produced study packs
CD ROM	Power-point slides
Software	Microsoft Access