



Answer Key

Part-B: Subject Specific Skills

IT 402 (Ver. 2.0)

1. Advanced Features of Word Processor

Unit 1: Digital Documentation [Advanced]

Unsolved Exercise ?

Section A (Objective Type Questions)

- A. 1. iii 2. i 3. iii 4. ii 5. iii 6. iii
7. ii 8. iii 9. iv 10. iii
- B. 1. Paragraph 2. Character 3. Page 4. Data source 5. Insert
6. Arrange option 7. Cropping

Section B (Subjective Type Questions)

- A. 1. A Style is a set of predefined formatting options that can be applied in a word processor document of OpenOffice Writer or MS Word.
2. There are different types of styles/categories in Word Processor such as character styles, paragraph styles, frame styles, page styles, numbering/list styles, etc.

3.

Style Name	Description
Character Styles	Used to format characters, words and phrases.
Paragraph Styles	Used to apply the same formatting such as font, numbering, layout, etc. to the paragraphs of a document.

4. To create a new style by drag and drop:

Step 1: Click on 'Format' menu and then select 'Styles and Formatting' option.

[Or] Press 'F11' function key from the keyboard. 'Styles and Formatting' window appears on the screen. Select text (whose formatting style is to be used for creating new style).

Step 2: Drag the selected text (at least one character) over desired 'Style' icon. Once the mouse pointer hovers over the 'Style', list of style related to it appears. Here, we have dragged the mouse pointer on 'Paragraph Styles' icon.

Step 3: Drag the selected character or text to the 'Styles and Formatting' window and release. A 'Create Style' dialog appears on the screen.

Step 4: Type a name in the 'Style name' box. Here, it is typed as 'My List'.

Step 5: Click on 'OK' button. The created style appears in the list of 'Paragraph Styles'.



Step 6: Select the text in which new style i.e., 'MyList' is to be implemented.

Step 7: Double-click on the 'MyList' style.

5. i. Resizing is the process of altering the image size without cutting any part of the image. When resizing an image, we change the dimension of the image so that it fits in the desired area.

To resize an image, follow the given steps:

Step 1: Select the image. Eight handles (green coloured square boxes) appear around the image.

Step 2: Drag the handles inward or outward to make the image smaller or bigger respectively.

Step 3: Drag one of the four corner handles, the opposite corner remains fixed while the other three corners move. Drag one of the side handles, the opposite side remains fixed.

[Or]

Step 1: Select the image.

Step 2: Click on the 'Format' menu and then select the 'Picture' option.

Step 3: 'Picture' window appears on the screen. Click on the 'Type' tab.

Step 4: Set the 'Width' and the 'Height' of the image.

Step 5: Click on the 'Keep ratio' checkbox to proportionately increase or decrease the size of image.

Step 6: Click on 'OK' button.

- ii. A template is a document that contains pre-defined formatting styles, graphics, tables, objects, and other information that are commonly used in a particular pattern. Thus, it saves our time too. We can create template to design a pattern for leave application, online form, brochure, front page of our project, etc. A template is used for creating other documents.

For example, we can define paragraph and character styles in a document, save the document as a template and then use the template to create a new document with the same styles.

6. A word processing package helps to create business documents for professional use within a short span of time. So digital documentation is a method of converting the physical text into digital text. It includes numerous formatting options to create beautiful documents. Thus, it can increase the efficiency of a user and help to perform well at the workplace and promote a user to scale newer heights. In offices and workplaces features like styles, templates, etc. are of great help while managing different types of documentation works.
7. Outline Numbering defines the hierarchy of headings in a document. Typically the first-level headings in a book-length document are the next level of headings after the chapter titles which may be numbered.

Some chapter titles and heading styles provide number to each chapter and heading level,



for example 1, 1.1, 1.2, 2, 2.1, and so on.

When chapters or sections are added or deleted, the numbering is automatically changed. The default paragraph styles assigned to outline levels are the heading styles Heading 1, Heading 2 and so on.

8. In Writer, the 'table of contents' feature enables us to build an automated table of contents from the headings present in our document. Whenever changes are made in the textual part of heading in any document or the page on which the heading appears, those changes automatically appear in the table of contents into which it is next updated.

Before starting, make sure that the headings are styled consistently. For example, we can use the 'Heading 1' style for chapter titles, the 'Heading 2' and 'Heading 3' styles for chapter headings and sub-headings respectively.

9. • **Keep scale:** It maintains original scale of the image after cropping, so that only the size of the image changes.
- **Keep image size:** It maintains original size of the image after cropping, so that only the scale of the image changes.
- **Reduce the scale of the image:** Enter negative values in the cropping boxes.
- **Increase the scale of the image:** Enter positive values in the cropping boxes.
10. i. To insert an image from a file:

Step 1: Click in the area of document where image needs to be inserted.

Step 2: Click on 'Insert' menu. Select 'Picture' option. A submenu appears on the screen. Click on 'From File' option. Insert picture' window appears on the screen.

Step 3: Locate the image file.

Step 4: Click on 'Open' button. By default, the inserted image is centered above the paragraph that we clicked in.

- ii. Inserting a Scanned Image: To insert a scanned image, the scanner must be connected to the system and the scanner software drivers must be installed. The scanner must support the TWAIN standard.

Step 1: Click in the document where we want to insert the scanned image.

Step 2: Click on 'Insert' menu and then select 'Picture' option. A submenu appears on the screen.

Step 3: Select the 'Scan' option. A submenu appears. Choose 'Select Source' from the sub-menu.

Step 4: 'Select Source' window appears on the screen. Follow the instructions for scanning.

Step 5: Click on the 'Scan' button.

- iii. To insert picture/image from the Gallery:

Step 1: Click on 'Tools' menu and select 'Gallery' option.

Step 2: 'Gallery' appears on the Writer screen. Select the desired 'Picture/Image'.

Step 3: Drag the desired image.

Step 4: Drop the image into the 'Writer' screen.

iv. To insert picture/image from OpenOffice Draw/Impress:

Step 1: Click in the document where you want to insert the image.

Step 2: Open OpenOffice Draw or Impress document containing the image to be inserted.
Here, we've opened OpenOffice Draw.

Step 3: Click on the Image.

Step 4: Drag Image from 'Draw' to 'Writer'.

v. Inserting a Calc Chart into a Text Document: Copy of a chart can be inserted from spreadsheet into a text document. To do so:

Step 1: Click on the document where the chart is to be inserted.

Step 2: Open the spreadsheet containing the chart to be inserted.

Step 3: In the spreadsheet, click the 'Chart'. Then eight handles appear on the screen.

11. When we add an image to a text document, we need to choose how to position it with respect to the text and other graphics. Placement of images at appropriate location is called positioning of images. The following techniques may be used to position an image in a Word Processor:

Anchors: Anchors can be used to position an image in a document. An anchored item remains in place or moves when we modify the document. The following anchoring options are available in the Word Processor:

- **To Page:** The image remains in the same position in relation to the page margins. It does not move after adding or deleting text or other images. This method is useful when the image is not required to be visually associated with a particular piece of text. It is often used while producing newsletters or other documents with intensive layout or for placing logos in letterheads.
- **To Paragraph:** The image is visually associated with a paragraph and moves along the paragraph too. It may be placed in the margin or another location. This method is an alternative in a table for placing icons besides paragraphs.
- **To Character:** The image is associated with a character but is not in the text sequence. It moves with the paragraph but can be placed in the margin or another location. This method is similar to anchoring to a paragraph but cannot be used with drawing objects.
- **As Character:** The image is placed in the document like any other character and therefore, affects the height of the text line and the line break. The graphic moves with the paragraph as we add or delete text before the paragraph. This method is useful for keeping screenshots in sequence in a procedure (by anchoring them as a character in a blank paragraph) or for adding a small (inline) icon in sequence in a sentence.
- **To Frame:** If the image has been placed in a frame, we can anchor the graphic in a fixed position inside the frame. The frame can then be anchored to a page, paragraph or character as required.



When an image is inserted, an anchor icon appears on the left side of image. We can position an anchored item by dragging the item to another location.

12. Some of the popular arrangement techniques used in word processor are:

- **Bring to Front:** This option places the image on top of any other graphics or text.
- **Bring Forward:** This option brings the image one level up on the screen relative to other objects (image or text). Depending on the number of overlapping objects, this option may be used several times to obtain the desired result.
- **Send Backward:** This option works opposite of 'Bring Forward' option. It sends the selected objects one level down on the screen.
- **Send to Back:** This option sends the selected image to the bottom of the screen relative to other objects (image or text), so that other images and text can cover it.

13. i. To apply a style:

Step 1: Select the text. Here the title of the document is selected.

Step 2: 'Press 'F11' function key from the keyboard. 'Styles and Formatting' window appears on the screen.

Step 3: Click on the 'Paragraph Styles' button. A list of pre-defined paragraph styles appears in the box.

Step 4: Scroll down the list and double-click on the desired style. Here, we have applied 'Title' style.

ii. To insert picture/image from the Gallery:

Step 1: Click on 'Tools' menu and select 'Gallery' option.

Step 2: 'Gallery' appears on the Writer screen. Select the desired 'Picture/Image'.

Step 3: Drag the desired image.

Step 4: Drop the image into the 'Writer' screen.

iii. To insert a scanned image, the scanner must be connected to the system and the scanner software drivers must be installed. The scanner must support the TWAIN standard.

Step 1: Click in the document where we want to insert the scanned image.

Step 2: Click on 'Insert' menu and then select 'Picture' option. A submenu appears on the screen.

Step 3: Select the 'Scan' option. A submenu appears. Choose 'Select Source' from the sub-menu.

Step 4: 'Select Source' window appears on the screen. Follow the instructions for scanning.

Step 5: Click on the 'Scan' button.

iv. Copy of a chart can be inserted from spreadsheet into a text document. To do so:

Step 1: Click on the document where the chart is to be inserted.

Step 2: Open the spreadsheet containing the chart to be inserted.

Step 3: In the spreadsheet, click the 'Chart'. Then eight handles appear on the screen.

Step 4: The position of Chart can be changed and it can be resized also. To edit the chart data, double-click on the chart.

v. A Table of Contents can be done by following the given steps:

Step 1: Create a document. Use different paragraph styles for different heading levels such as 'Heading 1' style for chapter titles, the 'Heading 2' and 'Heading 3' styles for chapter headings and subheadings respectively.

Step 2: Place the cursor where we want the table of contents to be inserted.

Step 3: Click on the 'Insert' menu. Select 'Indexes and Tables' option. A sub-menu appears on the screen.

Step 4: Select 'Indexes and Tables...'.

Step 5: 'Insert Index/Table' window appears on the screen.

Step 6: Type the name of 'Title' and select desired title's 'Type'.

Step 7: Click on the 'OK' button. The result will look like the figure below:

vi. Bring to Front: This option places the image on top of any other graphics or text.

Step 1: Right-click on the image. Hover the mouse over 'Arrange' option.

Step 2: Choose desired 'Arrange' option from the submenu.

vii. Send Backward: This option works opposite of 'Bring Forward' option. It sends the selected objects one level down on the screen.

Step 1: Right-click on the image. Hover the mouse over 'Arrange' option.

Step 2: Choose desired 'Arrange' option from the submenu.

14. • A template is a document that contains pre-defined formatting styles, graphics, tables, objects, and other information that are commonly used in a particular pattern.

• We can create template to design a pattern for leave application, online form, brochure, front page of our project, etc.

15. 1. Merge Field: A merge field is where you want to insert the information from a data source into a main document. Merge fields appear with chevrons (« »).

2. Data source is a file that contains the name and address of recipients to be merged with the document.

3. The main document contains the contents of the letter that remains the same for each of the merged document. It may contain text, letter, graphics, etc. It also contains the field names and address that retrieves names from the data source file of address.

The main document contains the contents of the letter that remains the same for each of the merged document. It may contain text, letter, graphics, etc. It also contains the field names and address that retrieves names from the data source file of address.

4. Two types of data on which mail merge can be applied are Labels and Letters

B. 1. Templatest

2. Mail Merge



2. Advanced Features of Spreadsheet

Unit 2: Electronic Spreadsheet [Advanced]

Unsolved Exercise ?

Section A (Objective Type Questions)

- A.** 1. iv 2. iv 3. iii 4. iv 5. ii 6. iii
7. i 8. iii 9. ii 10. i 11. iii 12. i
13. iii
- B.** 1. master worksheet 2. Goal seek 3. Solver 4. Sheet 1 5. Hyperlinks

Section B (Subjective Type Questions)

- A.** 1. Scenario is a tool to test 'what-if' questions. Scenario is a set of values that spreadsheet saves and can substitute automatically in cells on a worksheet. Each Scenario is named and can be edited and formatted separately, and chosen from a drop-down list in the Navigator and the title bar of the Scenario.

Step 1: Select the cells that contain the values which will change between scenarios. To select multiple cells, hold the 'Ctrl' key and then click each cell.

Step 2: Click on 'Tools Menu.

Step 3: Select 'Scenarios' option.

Step 4: Type a name for the new scenario. This name will be displayed on the title bar of the scenario on the worksheet itself.

Step 5: Click on OK button. It is also optional to select or deselect the options in the 'Settings' section. Following options are there in 'Settings' section.

Step 6: Click 'OK' to close the dialog box. A new Scenario is automatically activated. Repeat the steps to create another Scenario.

Multiple Operations is a planning tool for 'what-if' questions. Unlike Scenario. The Multiple Operations tool creates a formula array which is a separate set of cells that give all the alternative results for the formulas used.

Goal Seek is basically used when our output or target value is fixed and we have to make a change in any one of the input cell values. Goal Seek option reverses the usual order of a formula.

Solver is a more descriptive form of Goal Seek. Solver can deal with equations having multiple unknown variables. In Solver, we can manipulate a set of cells after knowing the output and can estimate the minimum or maximum value that can be entered into those cells. It is specifically designed to minimize or maximize the result according to a set of limiting rules defined by the user.

2. • **Display border:** It is used to highlight the Scenario with a border. The color for the border is specified in the field to the right of this option. The border has a title bar displaying the name of the last scenario.

- **Copy back:** It copies the values of cells that you change into the active Scenario. If you do not select this option, the Scenario doesn't change when you change cell values.
 - **Copy entire sheet:** It copies the entire sheet into an additional scenario sheet.
 - **Prevent changes:** It is used to prevent changes to the active scenario.
3. • **Formula Cell:** In the formula cell we can enter the reference of the cell which contains the formula. It contains the current cell reference. We can click another cell in the sheet to apply its reference to the text box.
 - **Variable Cell:** It specifies the reference for the cell that contains the value you want to adjust in order to reach the target.
 4. To create a scenario:
 - Step 1:** Select the cells that contain the values which will change between scenarios. To select multiple cells, hold the 'Ctrl' key and then click each cell.
 - Step 2:** Click on 'Tools Menu.
 - Step 3:** Select 'Scenarios' option.
 - Step 4:** Type a name for the new scenario. This name will be displayed on the title bar of the scenario on the worksheet itself.
 - Step 5:** Click on OK button. It is also optional to select or deselect the options in the 'Settings' section. Following options are there in 'Settings' section.
 - Step 6:** Click 'OK' to close the dialog box. A new Scenario is automatically activated. Repeat the steps to create another Scenario.
 5. To provide results using multiple operations:
 - Step 1:** To calculate the profit, enter the formula $=B4*B1-B2)-B3$ in cell 'B5'
 - Step 2:** In column D, enter expected 'Annual Sale Figure'.
 - Step 3:** Select the range 'D2:E6'. This will select the values in column D and empty cells of column E.
 - Step 4:** Click on 'Data' menu and then select 'Multiple Operations' option.
 - Step 5:** 'Multiple operations' dialog box appears on the screen. Click on the 'Formulas' field of the 'Multiple operations' dialog box, then click the cell 'B5'. This means that cell B5 contains the result i.e. the formula for calculation of result.
 - Step 6:** Place the cursor in the 'Column input cell' field and click cell 'B4'. This means that content of cell 'B4' is variable in the formula.
 - Step 7:** Click on Ok button.
 6. To perform GoalSeek in OO Calc:
 - Step 1:** Click on 'Tools' menu.
 - Step 2:** Select 'Goal Seek' option. Goal Seek' dialog box appears on the screen.
 - Step 3:** The cell address containing the formula is already entered in a 'Formula cell' field.
 - Step 4:** Enter the desired result i.e. '80'.



- Step 5:** 'Place the cursor in the 'Variable cell' field. In the sheet, click in the cell that contains the value to be changed. In this example, 'B7' is the cell.
- Step 6:** Click on 'OK' button.
- Step 7:** Click on 'Yes' button.
- Step 8:** Estimated marks of Computer subject is '75' to get '80%' aggregate.
7. To use solver in OO Calc:
- Step 1:** Place the cursor in the formula cell (i.e. 'B8').
- Step 2:** Click on 'Tools' menu.
- Step 3:** Select 'Solver' option. "Solver" dialog box appears on the screen.
- Step 4:** Set the result to 80.
- Step 5:** Select the cells whose value can be changed. (Here, B6 and B7).
- Step 6:** 'Set desired Limiting Condition. Here, we have set the rule that the marks of Computer subject must be greater than marks of Science subject.
- Step 7:** 'Click on 'Solve' button. 'Solving Result' dialog box appears.
- Step 8:** Click on 'Keep Result' button to keep the updated values in the cell.
8. An absolute hyperlink contains a full address, the protocol and domain name for URLs, and the entire path and file name for documents where as a relative hyperlink contains a partial address.
9. Macros are used to perform different types of operations in a Spreadsheet:
1. Formatting settings to be applied repeatedly in a spreadsheet
 2. Sorting Data
10. Hyperlinks can be used in Calc to jump to a different location from within a spreadsheet and can lead to other parts of the current file, to different files. It can be stored within a file as either Relative or Absolute hyperlinks.
11. Anshita must apply Goal seek to get the desired result.
- i. Scenarios: Scenarios are a tool to test "what-if" questions. Each scenario is named, and can be edited and formatted separately. It is essentially a saved set of cell values for your calculations. You can easily switch between these sets using the Navigator or a drop-down list which can be shown beside the changing cells
 - ii. Goal Seek: It is used to calculate a result based upon existing values. Using Goal Seek option under Tools menu, we can discover what values will produce the result that we want.
 - iii. Solver: It is more elaborated form of Goal Seek. The difference is that the Solver deals with equations with multiple unknown variables. It is specifically designed to minimize or maximize the result according to a set of rules that we define.

iv. Subtotal: SUBTOTAL is a function listed under the Mathematical category when you use the Function Wizard (Insert > Function). Because of its usefulness, the function has a graphical interface. SUBTOTAL, totals/adds data arranged in an array—that is, a group of cells with labels for columns and/or rows. Using the Subtotals dialog, you can select arrays, and then choose a statistical function to apply to them. For efficiency, you can choose up to three groups of arrays to which to apply a function.

- B. 1. i. 137.50 ii. 97.50 iii. 123.38
2. File → Rename

3. More About Spreadsheet

Unit 2: Electronic Spreadsheet [Advanced]

Unsolved Exercise ?

Section A (Objective Type Questions)

- A. 1. i 2. i 3. ii 4. iii 5. i 6. ii
B. 1. False 2. True 3. True 4. True 5. True

Section B (Subjective Type Questions)

- A. 1. Sorting refers to the arrangement of data in ascending or descending order. To sort data in OpenOffice Calc using macro:
- Step 1:** Select the cell in which data is stored. A submenu appears on the screen. Select 'Record Macro' option.
- Step 2:** Click on 'Tools' menu.
- Step 3:** Select 'Macros' option.
- Step 4:** Click on 'Sort Ascending' option.
- Step 5:** Sorted data will appear on the screen. Click on 'Stop Recording' option. 'OpenOffice Basic Macros' dialog appears on the screen.
- Step 6:** Click on 'New Module' button. 'New Module' dialog box appears on the screen.
- Step 7:** Type the name of the module.
- Step 8:** Click on 'OK' button.
- Step 9:** Click on 'Save' button.
- Step 10:** To use the created macro for sorting data in ascending order, let's try in a new set of data.
- Step 11:** Select the cells. Click on 'Tools' menu and then select 'Macro' option.
- Step 12:** A sub-menu appears on the screen. Select 'Run Macro' option. 'Macro Selector' window appears on the screen.

Step 13: 'Selecting the Macro for sorting data.

Step 14: 'Click on 'Run' button.

2. Calc provides another type of comments (formerly called 'notes') which authors and reviewers often use to exchange ideas, ask for suggestions or brainstorming the document. When comment is attached to a cell, a callout appears on the screen where we can type text. A small square in the upper right corner of a cell marks the position of a comment.

Comments can be added by following the given steps:

Step 1: Select the cell in which 'comment' is to be inserted.

Step 2: Right-click and select 'Insert Comment' option.

A comment box appears on the screen. Type the desired comment.

Step 3: Click outside the box to close it. Now the cell to which you added the comment has a coloured dot in the upper right-hand corner.

Step 4: To view the comment, hover the mouse pointer over the cell that has a comment; the comment will be displayed.

3. Background color, border style, transparency and other attributes of a comment can be customised as per the need of the user.

Step 1: Right-click on the cell containing the comment marker and select 'Show Comment' from the pop-up menu.

Step 2: Click on the comment, the 'Formatting' toolbar changes to show many of the Comment Formatting options.

Step 3: After formatting the comment, click outside the comment to deselect it. To hide the comment again, right-click on the cell and deselect 'Show Comment' on the pop-up menu.

4. Click on 'Tools' menu and then select 'Macros' option. A sub-menu appears on the screen. Click 'Record Macro' option to start the macro recorder.

5. Steps to use macros defined in an earlier worksheet:

- i. Click on Tools.
- ii. Place the mouse pointer over Macros option. A sub-menu will open.
- iii. Click on Run Macro option. Macro Selector dialog box will appear on the screen.
- iv. Select the required macro to be used Library and Macro name lists.
- v. Click on Run button.

- B.**
1. To be done by the student in computer lab.
 2. Track changes

4. Database Management

Unit 3: Database Management System

Unsolved Exercise ?

Section A (Objective Type Questions)

- A.** 1. i 2. iii 3. i 4. i 5. iii 6. iii
7. iv 8. i 9. iii 10. iii 11. iv 12. iv
13. iii 14. i
- B.** 1. False 2. False 3. False 4. False 5. True

Section B (Subjective Type Questions)

- A.** 1. A database is defined as an organized collection of data that can be visualized as a container of information.
2. RDBMS is a relational DBMS in which tables are linked to each other by fields. In addition to all the advantages of DBMS, RDBMS helps in the management of a database in a broader way.
3. i. **Table:** A table is a collection of logically related records. The multiple records of a database are arranged together in a tabular structure to make a table. It is made of rows and columns.
ii. **Fields:** A field represents a single type of related information.
iii. **Records:** A record is a complete set of values stored under fields.
4. There are three options in the 'Base' that enable to create a table:
- Create Table in Design View ...
 - Use Wizard to Create Table ...
 - Create View ...
5. Data type of the field specifies what kind of data is to be stored in that particular field and what kind of operation can be performed on that data. Two data type used in OpenOffice Base are:
- i. Numeric Data Type ii. Alphanumeric Data Type
6. Char is a fixed length data field and Varchar is a variable size data field.
7. Sorting means to arrange the data of a table in a particular order like in ascending or descending order. There are two options for sorting records of a table, they are: 'Sort Ascending' and 'Sort Descending'.
8. Referential integrity is applied in database to maintain accuracy and consistency of data in a relationship between tables. When data is linked between two or more tables with the help of primary key and foreign key constraints, this rule helps:
- Adding more records to a related child table if there is no associated record available in the table where primary key is defined in the parent table.



- Changing values in a primary key table will also reflect in dependent records present in associated table(s).
 - Deleting records from a primary key table if there are any matching related records available in associated child table(s).
9. Forms enable to provide a user interface for entering of data or to display intermediary information. In the Form, the user can add or modify data.
 10. In 'Base', there are two options to create a form i.e., 'Create Form in Design View...' and 'Use Wizard to Create Form...'.

11.

Basis of differences	Forms	Reports
1. Source of	Input	Output
2. Relate to	Single table	Multiple tables
3. Purpose	Display on screen	Print on paper
4. Changes by user	Possible	Not Possible

12. In database, query is a tool through which data is evaluated or manipulated and reports are generated. A user can apply a filter criteria in query so that only those records which meet the criteria are evaluated and displayed.
13. In 'Base', there are three ways to generate a Query.
 - Create Query in Design View...
 - Use Wizard to create Query...
 - Create Query in SQL view...
14. A report summarizes or displays the information in a format that is suitable for viewing or publishing. Reports are used to present the results in a meaningful and useful manner. Reports can obtain information from tables or queries. Reports are printed to share information.
15. Numeric datatypes are: TinyInt, SmallInt, Integer, BigInt, Decimal, Real, Float, Double and Boolean. Alphanumeric Datatypes are: Char(fix), Varchar, Varchar_ignorecase and Longvarchar(Memo)
16. 1. A database management system is a software package with computer programs that controls the creation, maintenance, and use of a database. It allows organizations to conveniently develop databases for various applications.
2. Two databases are:
 - i. Microsoft Access
 - ii. MySQL
 - iii. OpenOffice Base
3. Id field will be suitable for Primary Key.

4. Yes, we can make more than one column as a primary key in a table and it is known as Composite Primary Key.
17. 1. Sorting means to arrange the data of a table in a particular order like in ascending or descending order. There are two options for sorting records of a table, 'Sort Ascending' and 'Sort Descending'.
2. Referential integrity is applied in database to maintain accuracy and consistency of data in a relationship between tables. When data is linked between two or more tables with the help of primary key and foreign key constraints.
3. Many-to-many relationships: In this relationship, none of the associated tables have Primary Key column. It means that all the columns of Primary Key fields are associated with all the columns of related tables. It occurs when each record in TableA may have many linked records in TableB and vice-versa.
4. The main table of a database is referred to as the 'Master Table' and the tables in which the related data is stored are referred to as 'Transaction Table'.
- B.** 1. i. 95.4% ii. Mohan Garg, ₹50,000 iii. 5 iv. 6
2. Data security
3. i. Purchases, stock
ii. Reduction in Data Redundancy, Data Integrity

5. More on Database

Unsolved Exercise ?

Section A (Objective Type Questions)

- A.** 1. i 2. ii 3. iv 4. iii 5. i 6. ii
- B.** 1. SELECT 2. DDL 3. CREATE 4. DML 5. DDL 6. SELECT
7. DELETE

Section B (Subjective Type Questions)

- A.** 1. Data Definition Language (DDL) and Data Manipulation Language (DML).
2. • DDL is a standard for commands that define the different structures in a database. for example, CREATE, ALTER, TRUNCATE, RENAME, DROP, etc.
- DML is a language that enables users to retrieve, update, insert and delete data in a database. For example, SELECT, UPDATE, INSERT INTO, DELETE, etc.
3. i. Create Table statement is used to create a table in database.
- ii. 'Update' statement is used for modifying records in a database.
- iii. 'INSERT' statement is used to add one or more records to a database.
- iv. 'Delete' statement is used to remove one or more records in a database.



4. To create a table, assign a name to the table and then define columns and the data types of each column.

Syntax:

```
CREATE TABLE TABLE_NAME
(
    column_name1 data_type (size),
    column_name2 data_type (size),
    column_name3 data_type (size),
    .....
    .....
    column_nameN data_type (size)
);
```

5. INSERT INTO student (roll no, name, birthplace, contact no, previous school)

```
VALUES (10, 'Anupam', 'Delhi', 3456787654, 'Sunshine Public School');
```

6. UPDATE command is used for modifying records in a database. For example,

```
UPDATE STUDENT SET MARKS = 80
WHERE STUDENTS_ID = 3;
```

7. SQL Comparison Operators:

Operators	Description	Example
'='	Checks if value of 'a' is equal to value of 'b'. If yes, condition becomes true, else false.	(a=b) is false.
'!='	Checks if value of 'a' is not equal to value of 'b'. If yes, condition becomes true, else false.	(a!=b) is true.
'<>'	Checks if value of 'a' is equal to value of 'b' or not. If yes, condition becomes true, else false.	(a<>b) is true.
'>'	Checks if value of 'a' is greater than value of 'b'. If yes, condition becomes true, else false.	(a>b) is false.
'<='	Checks if value of 'a' is less than or equal to value of 'b'. If yes, condition becomes true, else false.	(a<=b) is true.
'<'	Checks if value of 'a' is less than value of 'b'. If yes, condition becomes true, else false.	(a<b) is true.
'!<'	Checks if value of 'a' is not less than value of 'b'. If yes, condition becomes true, else false.	(a!<b) is false.
'>='	Checks if value of 'a' is greater than value of 'b'. If yes, condition becomes true, else false.	(a>=b) is false.
'!>'	Checks if value of 'a' is not greater than value of 'b'. If yes, condition becomes true.	(a!>b) is true.

8. 1. Four fields and four records are there in table Sales.
2. SQL commands:
 - i. select Sale_Id, Price from Sales where Discount > 1000;
 - ii. select * from Sales order by Prod_Name;
 - iii. select Prod_Name, Price- Discount from Sales;

- B.**
1. i. UPDATE Emp SET Salary = Salary + 1000;
SELECT * FROM Emp;
 - ii. UPDATE Emp SET Salary = Salary - 500;
SELECT Emp_id, Salary FROM Emp;
 - iii. UPDATE Emp SET Salary = Salary * 3;
SELECT Ename, Salary FROM Emp;
 - iv. UPDATE Emp SET Salary = Salary/2;
SELECT Emp_id, Ename, Salary FROM Emp;
 - v. SELECT Emp_id, Ename FROM Emp;
 2. i. INSERT INTO ITEM (ITEM_NO, INAME, PRICE, QTY)
VALUES (15, "PENCIL", 20, 10);
 - ii. SELECT * from item WHERE QTY > 10;
 - iii. UPDATE ITEM SET QTY = 25 WHERE ITEM_NO = 13;
 - iv. SELECT PRODUCT (PRICE, QTY) FROM ITEM);
 - v. SELECT * FROM ITEM WHERE PRICE = 10;
 - vi. SELECT * FROM ITEM ORDER QTY PRICE ASC;
 - vii. ITEM_NO

6. Web Application

Unit 4: Web Applications and Security

Unsolved Exercise ?

Section A (Objective Type Questions)

- A.**
- | | | | | | |
|--------|--------|---------|---------|-------|--------|
| 1. iii | 2. iii | 3. iv | 4. ii | 5. iv | 6. iii |
| 7. iv | 8. iii | 9. iii | 10. iii | 11. i | 12. i |
| 13. i | 14. iv | 15. iii | 16. iv | | |
- B.**
- | | | | | | |
|---------|---------|---------|---------|---------|---------|
| 1. True | 2. True | 3. True | 4. True | 5. True | 6. True |
|---------|---------|---------|---------|---------|---------|

Section B (Subjective Type Questions)

- A.**
- | | |
|------------------------------|-------------------------------|
| i. Digital Subscriber Line | ii. Internet Service Provider |
| iii. Modulator – Demodulator | iv. World Wide Web |
| v. Local Area Network | vi. Metropolitan Area Network |



- vii. Wide Area Network viii. Peer to Peer
- ix. Unified Payments Interface
2. Google Chat, Skype, Hike, WhatsApp, WeChat
3. Three rules and etiquettes to be followed while chatting on the Internet are:
- Messages should be short.
 - The identity of users should be known to others.
 - It's better to check the user availability (through status) before chatting.
4. Blog refers to uploaded comments on www. It is a platform where writers or opinion makers share their views on any subject of their choice.
5. The webpage is a single document on the web having a unique address. On the other hand, a website is a collection of multiple webpages in which information on a related topic is located under the same domain address.
6. It is a tool that enables to create blog posts without any connectivity to the Internet connection and publishes the blog whenever Internet connectivity is available. Some offline blog editors are:
- BlogDesk • Window Live Writer • Qumana
7. flipkart.com, amazon.com, futurebazaar.com, homeshop18.com, myntra.com
8. Some common online threats are:
- Phishing: Phishing is an activity that demands the user's sensitive data like bank details, username or passwords, credit card details, and other details through email attachments or links. The links redirect the user to such a fake website that looks too similar to the bank's website and asks to enter data.
 - Viruses: Viruses are malicious program or harmful program which can damage the computer system, memory and replicate themselves.
 - Email Spoofing: Email spoofing is an activity of an email from a source that is fake and used for phishing emails and spam emails to run a campaign. The main goal of email spoofing is that recipient opens a message and clicks on the links provided in that email.
 - Chat Spoofing: It similar to email spoofing on the chat platform.
 - Denial of Services: The DoS attack refers to an attack from a large number of computers to a single target and tries to prevent the device from properly functioning.
 - Password Attack: Password attack is a common security threat that is aimed to guess the user's password or steal the user's password using different tricks.
9. Two benefits of online transactions are:
- Transaction can be done from almost anywhere.
 - Payments can be made anytime.



10. e-Governance (Electronic Governance) refers to the application of Information and Communication Technology (ICT) tools for delivering the services of government. The basic purpose of e-Governance is to simplify processes for acquiring services and passing required information properly to the stakeholder at National, State and Local levels and to promote simple, fast, responsive, accountable and transparent governance. Through e-Governance, the citizens get convenient, efficient and transparent service.

e-Banking refers to the online banking transactions that can be done through a computer on the Internet from anywhere irrespective of the location of the user. It enables an account holder of a particular bank to do transactions like transfer of fund to or from other accounts, payment of bills, etc. by oneself on a computer. For e-banking, the bank provides PIN, that is, Personal Identification Number to the account holders. To do the transactions, the account holder has to open the website of the bank and has to login to his account through his secret identification password.

11. Filter Keys

It enables to ignore brief or repeated keystrokes, making typing easier for people with hand tremors. It is used to ignore the repetitive action that occurs due to pressing of keys for some long duration or in rapid succession.

Toggle Keys

Toggle Keys help people who have vision impairment or cognitive disabilities. It gets active for some special purpose when pressed 'ON' by producing beep (sound) whenever the keys such as Num Lock, Caps Lock, etc., are pressed.

12. Online shopping could be useful in situations when:

- i. A customer does not have sufficient time to visit stores.
- ii. Visiting a store is more expensive than purchasing a product online.

Two popular online transaction websites are:

- i. Flipkart, an online shopping portal for buying consumer products.
- ii. EBay, an online portal for buying and selling goods.

13. a. ISP provides accessibility to use Internet through its server. An Internet Service Provider usually supplies the access rights with a username and password.

b. i. Wireless Access Point

ii. WWW (World Wide Web)

- c. • Data Sharing: One of the most important benefits of networking is that it enables to share data among networked computers irrespective of locations.
- Files Transfer: Users can send text files, spreadsheets, documents, presentations, audio files, video files, etc. to other users.
- d. A blog is a discussion style site used by nontechnical or technical users for creating personal web pages. Blogs are similar to an online personal diary and simple to use.

The advantage of offline blog is, it can be created first and later publish the content when an active internet connection is available.

- B.** Mr. Singh must opt for WAN so that records in all his offices are connected to each other. Within the office in each city, the computers can be connected using LAN.

7. Web Security and Workplace Safety

Unsolved Exercise ?

Section A (Objective Type Questions)

- A.** 1. iv 2. iii 3. iv 4. i 5. i 6. i
7. iii 8. ii
- B.** 1. False 2. True 3. True 4. True 5. True 6. False

Section B (Subjective Type Questions)

- A.** 1. Some common online threats are:
- Phishing: Phishing is an activity that demands the user's sensitive data like bank details, username or passwords, credit card details, and other details through email attachments or links. The links redirect the user to such a fake website that looks too similar to the bank's website and asks to enter data.
 - Viruses: Viruses are malicious program or harmful program which can damage the computer system, memory and replicate themselves.
 - Email Spoofing: Email spoofing is an activity of an email from a source that is fake and used for phishing emails and spam emails to run a campaign. The main goal of email spoofing is that recipient opens a message and clicks on the links provided in that email.
 - Chat Spoofing: It similar to email spoofing on the chat platform.
 - Denial of Services: The DoS attack refers to an attack from a large number of computers to a single target and tries to prevent the device from properly functioning.
 - Password Attack: Password attack is a common security threat that is aimed to guess the user's password or steal the user's password using different tricks
2. Web browsers have built-in password management system that helps to store passwords while browsing or opening an e-mail. It often prompt to save user names and passwords when users attempt to login.
- This facility is offered to the users, so that they can login to their frequently used websites or e-mail accounts without having to type the usernames or passwords time and again. However, it is not advisable to store such data on public or on shared computers, else any other user can open the website or e-mail.
3. Four practices to secure data are:
- One needs to ensure that his/her user name, password, credit card or online banking information are secure as they are prone to be tracked by unauthorized users.

- Be cautious while filling up the forms, responding to calls (pretending to be legitimate) that ask your name, DOB, bank details, etc.
 - During certain transactions, some information such as credit card details or personal information is sent over the network. Therefore, it is always recommended to use only secure websites for doing such transactions. Always verify whether the website you are using, keeps transactions secure or not.
 - Never connect your device to any unsecured or unknown Wi-Fi network. Connecting to an unsecure network might lead to leakage of your valuable data.
4. Every organization must follow a standard set of safety rules, like:
 - All types of instructions and procedures related to safety measures must be clearly stated and displayed at key places which are visible to most of the employees.
 - All workers should be well aware of the causes that can lead to accidents and accordingly demonstration must be given to handle any emergency situation.
 - Ensure the presence of necessary safety equipments or gadgets in the organization that will help to cope up with any kind of emergency.
 5. One must follow the following safety measures to avoid Falls and Slips:
 - Floors must be clean and dry.
 - Oil spills and dust must be immediately cleaned.
 6. Following are the measures that must be adapted to prevent electrical accidents:
 - The users should inspect cord and plug connected equipment, extension cords, electrical fittings, etc. for damages before each use.
 - Worn or damaged plugs should be discarded or repaired. Damaged and frayed switches and wires should be replaced.
 7. It should be a common practice in a workplace that whenever anyone is injured, use First Aid and:
 - Assure the injured to keep calm and not to panic
 - Keep the injured warm if he/she is under shock
 8. An occupational hazard refers to a hazard which is experienced at one's workplace. It can be in the form of chemical hazard, biological hazard, physical hazard and psychosocial hazard. In other words, it refers to a risk accepted as a consequence of a particular occupation.

B. 1. Tips for keeping non-guessable passwords:

- Keep the length of the password of at least 8 characters, including a combination of numbers and symbols.
- Avoid keeping passwords based on repetition, letters or number sequences.
- Use a combination of uppercase and lowercase.
- Avoid using the same password for multiple purposes.
- Avoid using something about yourself that is publicly known to others.
- Avoid keeping names of loved ones, relatives, friends etc. as passwords.



2. Some safety and first-aid measures that can be taken by Geeta are:
- i. Ensure to divert the traffic from spot of accident.
 - ii. Turn off the vehicles involved in accident to avoid spilled fuel catching fire.
 - iii. Move the victim to safer side
 - iv. Call ambulance.
 - v. Take first-aid kit from the vehicle and pour antiseptic solution on and around the wound.
 - vi. Press antiseptic dampened cotton over the wound to slow down and ultimately control bleeding till medical aid arrives.

