Unit 1 . Word Processors

Introduction

Currently, many people use computers to create documents. This is referred to as **electronic word processing**

Definition

A **word processor** is an application software that allows the user to create, format, edit, save and print text documents. Examples of word processors include Microsoft Word, WordPerfect, WordStar, WordPro, Open Office Word, Lotus WordPro, Apple Works, among others.

Advantages of electronic word processors

• Documents can be stored for future use.
• Using a word processor is easier due to the many features available for editing a document.
• There are superior features in word processors such as grammar checker and autocorrect.
• Word processors have features for creating references, headers, footers, indexes, and footnotes.
• Availability of many formatting features.
• The ability to create and import tables, text, and graphics from other applications.
• Possibility of printing multiple copies from a document.

Purpose and Basic Features of word processors

Purpose of word processors

• Create documents such as newsletters, books, reports, projects, letters, essays, memos and Curriculum vitae(CV)
• Editing
• Formatting
• Saving
• Mail merging
• Printing

Basic features of word processors

• To create, edit, format, store and open a file.
• Word wrap that automatically moves a word or cursor to the beginning of the next line if it does not fit at the end of the current line.
• Spelling and grammatical tools such as grammar checker, spell checker, thesaurus (dictionary of synonyms and antonyms) and English dictionary.
• Ability to import objects, tables, text and graphics from other applications.
• They have superior editing and formatting tools.
• They have features like headers and footers, indexes, footnotes , endnotes and references.

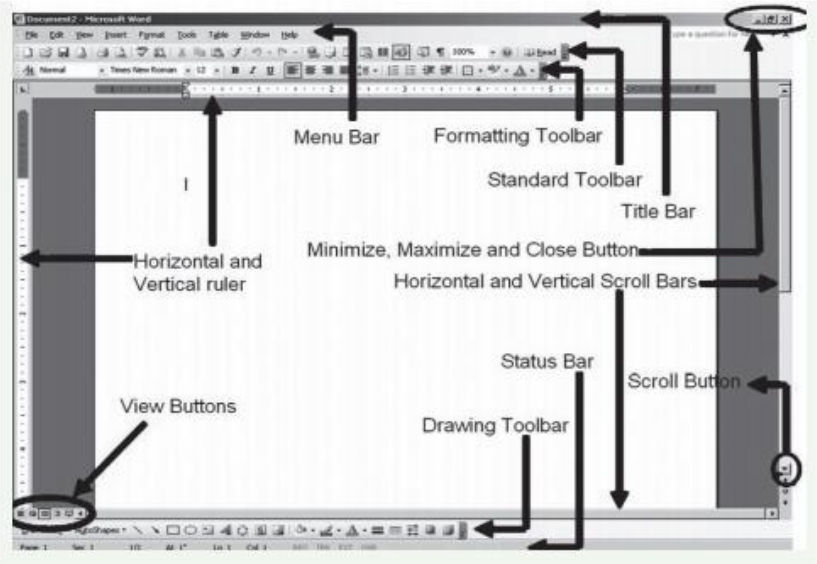
Windows word processor has the following features:

• Title bar - Shows the tasks that are running. It has minimise, restore and the close buttons.
• Main menu/tabs - Has all the commands a user needs to edit a document.
• Toolbars/ribbons - Command icons to edit information in the application.
• Document window- Area where information is inserted.
• Status bar - It shows the document status information such as page number, section and language.

Factors to consider when choosing a word processor

- The operating system installed in your computer.
- User friendliness.
- Its formatting and editing features.

Microsoft Word screen layout window



Running Microsoft Word program

Creating a document

A document can be created from scratch, from a template or by importing it from another location.

Saving a new document

This is the process of storing a document in a storage medium. A document can be saved in the following two ways:

i) **Save As:** This is saving a new document or when altering the filename or location.

ii) **Save:** This allows the user to save or update changes in a file without necessarily changing the filename or location.

Retrieving a document

Opening a document from a named storage location.

Closing a document

To depart from that document while the application is still running. You need to save all the changes made on the document before closing.

Exiting from Word

close the application.

Editing and formatting a document

These are features that either change the content or appearance of a document.

Editing a document and the Features of Editing

This is the process of making changes to the content in a document. It may be necessary to highlight content before performing editing.

Editing features

• Deleting: Erasing text that had been typed using one of the following keys.

i) **Backspace key** -It erases one character at a time from right to the left of the cursor.

ii) **Delete key** - Erases character from left to right of the insertion pointer.

• **Copying and pasting text and objects**: Copying means creating the exact replica of a text or an object. One can also use the keyboard shortcut keys, Ctrl + C to copy and Ctrl + V to paste.

• **Moving text and objects**: Changing the position of text or an object in a document from a source location to a new destination. One can also use the keyboard shortcut keys, Ctrl + X to cut and Ctrl +

Typing modes/ Editing modes

i) **Insert mode-** Feature that places words or characters between others by pushing the existing text towards the right of the cursor without replacing it.

ii) **Type over mode-** When text is typed between existing words or characters, the new text automatically replaces the existing text by erasing it.

Note: To switch between type over and insert mode, simply press the insert key on the keyboard or double select the OVR label on the status bar.

• **Find and replace**: - Allows the user to search for a word or phrase in a document and then replace the word or phrase.

• **Proofreading:** - Checking the document for errors.

i) **Spelling and grammar checker:** Allow the user to correct spelling errors and incorrect grammar structures.

ii**) Using the thesaurus:** - Helps the user find words or phrases with similar meaning (synonyms) or opposite meaning (antonyms) to the one selected.

iii) **Autocomplete**- Automatically finishes a word after the user types the first few characters of the word.

iv) **Autocorrect-** Automatically detects wrongly spelt words or capitalised words thereby replacing them with the correct word.

•**Undo**- Reverses the last executed action.

• **Redo**- Reverses the last undone action.

Formatting a document

Formatting refers to applying various styles or features to enhance the document's appearance. One can format text, a paragraph or a page.

Text formatting

Refers to changing the appearance of characters. Common formatting styles include:

- Changing font type, font size, font style and font colour.
- **Bolding text** -This is the process of making the selected text appear darker than the rest of the text.
- **Underline text** -This is the process of placing a line at the base or bottom of a word or a phrase.
- **Italicising text** - This is the process of making the font to appear as though it is slanting in the forward direction
- **Superscript**- A character that is written slightly above another character e.g. X^2
- **Subscript**- A subscript is a character that is written slightly below another character e.g. Y_{10}.

Paragraph formatting

Refers to changing the appearance of a block of text by some action. It includes: Text alignment- placing the text relative to the left,right or center of the page. Types of text alignment: i) Left alignment: The lines of text are evenly arranged along the left margin but unevenly at the right margin. ii) Right alignment: The lines of text are evenly arranged along the right margin but unevenly at the left margin. iii) Center alignment: The lines of text are placed at the center of each line in relation to the left and right margins. iv) Justification: Arranging lines of text evenly along the left and right margin.

Page formatting and formatting and editing table

Refers to applying various styles to change the appearance of a page or a document. This includes:

- **Inserting page breaks**: Identifies the end of one page and the beginning of the next.
- **Creating columns:** Columns are used to arrange data in a vertical order.
- **Page setup:** Allows the user to manipulate the page background, orientation, margins, paper size, hyphenation and paper source.
- **Margin**: Is an imaginary space that encloses the working area.
- **Paper size**: The dimension of the page.
- **Page orientation:** Refers to the positioning of the page in relation to the text.

Types of page orientation:

i) **Portrait** - Text and graphics are printed with the longest side vertically upright.

ii) **Landscape** -Text and graphical objects are placed with the longest side of the page placed horizontally and the lines of text printed parallel.

- **Page layout:** Lets the user specify how text will be placed on the page from the margins.
- **Headers and Footers**: A header is text or an object placed at the top of all pages in a document while a footer appears at the bottom of all pages in a document.
- **Page numbering:** These are numbers placed on top or bottom of every page. They are inserted to make references when locating information in a document easier.

Formatting and editing a table

A table is a graphical object made up of rows and columns used to organise data and information for easy interpretation such as a class timetable and a class merit list. Common table formatting includes:

• **Inserting rows and columns:** Is the process of adding a row or a column in a table.

• **Deleting rows, column or cells**: Is the process of removing a row/a column/ cell/cells in a table.

• **Merging cells in a table:** Is the process of combining two or more cells in a table.

• **Splitting cells in a table:** Is the process of subdividing one cell in a table or several cells to many cells in a table.

• **Borders and shading**: Is the process of applying various features to the cell lines such as colour and thickness. A border is an artwork that frames a document, a cell, an object among others.

• **Table conversions:** Allow the user to convert lines of text into a table and a table into lines of text.

• **Importing tables:** Allow a user to get a table from other applications or from a file (Import).

• **Performing arithmetic calculations in a table:** Allows the user to perform mathematical calculations such as AVERAGE, SUM, and PRODUCT among others in a table.

• **Sorting:** Allows the user to arrange text and values either from top to bottom (descending order) or from bottom to top (ascending order).

Mail merging documents and printing a document

Mail merging is the process of generating personalised letters or documents by combining a main document with an existing data source. The main document is usually a letter and the source document the address book.

Files created during mail merging process

• Primary file (main document)

• Secondary file (Data source)

• Merged file

A form letter can be merged with the data source to:

• A new document

• A printer

• Email

• Fax

Printing a document

It is the process of producing the soft copy document on a piece of paper (hardcopy).

Print previewing a document: Is the process of seeing how your document will come out when printed. The user is able to see the document first before printing it. The user can make the necessary adjustments before printing it.

Print option

This printer option allows the user to select;

• The printer to use from the several printers installed in the computer.

• Page orientation i.e. whether landscape or portrait.

• Page/range of pages to print i.e. selection e.g. 4-13.

• The number of copies to print.

Graphics in Microsoft Word

Graphics are non-text images such as pictures, charts and drawings. Sources of graphics in Microsoft word include:

- Microsoft Clip Gallery
- Scanner
- Drawing tools e.g. Auto shapes and paint
- **Internet Editing and formatting pictures:** This is adjusting the brightness, contrast, size, colour, cropping of pictures among others. **Cropping** refers to cutting the unwanted parts of a graphic

KCSE Revision Questions

KCSE 2002 Paper 1

Qn.12. State and explain two reasons why word processing is one of the most common applications of many computer users. (2 marks)

KCSE 2001 Paper 1

Qn.13. Explain how a paragraph can be moved from one place to another in word processing. (2 marks)

KCSE 2017 Paper 1 Qn.

9. State the function of each of the following computer keyboard keys when using a word processor.

i) End (1 mark)

ii) Insert (1 mark)

iii) Backspace (1 mark)

KCSE 2017 Paper 1

Qn.17. a) List three paragraph formatting activities in word processing. (3 marks)

b) Differentiate between bolding and highlighting text. (2 marks)

KCSE 2012 Paper 1 Qn.

10. With reference to word processing, describe the term:

a) Superscript; (1 mark)

b) Section breaks. (1 mark)

KCSE 2005 Paper 1 Qn.11. Explain the following terms as used in word processing: (3 marks)

a) Indenting

b) Alignment

KCSE 2006 Paper 1

Qn.11. Distinguish between margins and borders as used in word processing. (2 marks)

KCSE 2006 Paper 1

Qn.12. a) List two arithmetic operations that can be performed on a row of numeric data in a word processing table. (1 mark)

b) In each case of (a) above, write the expression used. (2 marks)

KCSE 2000 Paper 1

Qn.13. Explain the terms: editing, printing and saving as used in word processing. (3 marks)

Unit 2. SpreadSheets

Introduction, Definition and Advantages of electronic spreadsheets

Manual data analysis and book keeping has been replaced by specialised software and spreadsheets consisting of rows and columns. Today, electronic spreadsheets are widely used.

Definition of terms

A spreadsheet is a grid divided into rows and columns on which various numerical, alphabetic and alphanumeric data is entered.

Electronic spreadsheet is application software used to calculate, organise and analyse data. Examples of electronic spreadsheets include Microsoft Excel, LibreOffice, Lotus 1-2-3, Lotus Symphony and Open Office Calc.

Workbook- Is the main spreadsheet file that consist one or more related worksheets.

Cell – It is an intersection of a row and a column in a worksheet.

Cell address - Is an identification of a cell's location using column letter and row number.

Advantages of an electronic spreadsheet

i) It gives the user a larger virtual sheet for data entry and manipulation.

ii) Has better editing and formatting capabilities than manual spreadsheet.

iii) It enhances neatness in the final presentation of work.

iv) Uses benefits of computers such as speed and accuracy to assist the user efficiently accomplish tasks.

v) Utilises a large storage space to save and retrieve files.

vi) Uses formulae and functions that quickly manipulate mathematical data.

vii) Automatically adjusts the results to a formula when the data values are changed using automatic recalculation feature.

viii) Has superior data management tools like sorting, filtering and subtotals function among others.

Components and application areas of spreadsheets

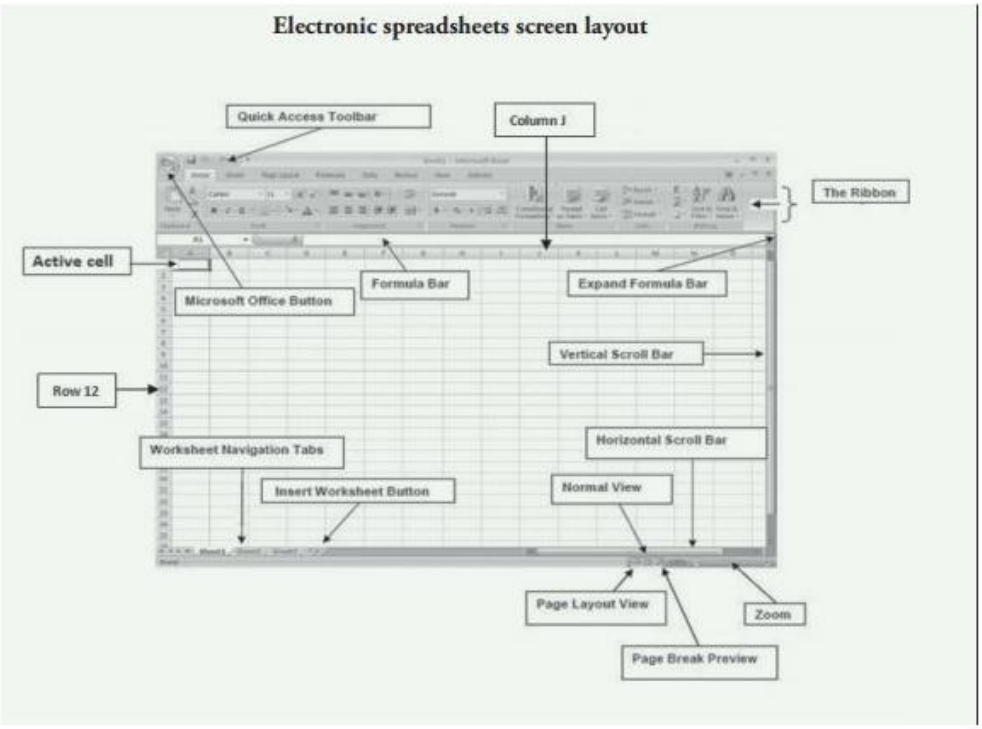
i) **Worksheet** – This is a grid of rows and columns where data is entered and manipulated.

ii) **Database** - Is a collection of related data entries made on a worksheet.

iii) **Graphs** - Is a chart summarising data items on a worksheet.

Application areas of a spreadsheet

1. **Forecasting** - Uses 'What if ' analysis tool to make future predictions.
2. **Scientific application** – Are used to solve scientific, mathematical and engineering problems.
3. **Statistical analysis** – Uses formulae and functions to evaluate data such as computing sum, average, mode among others
4. **Accounting** – Used to prepare financial statements such as trial balances, cash flow statements and balance sheets.
5. **Data management** – Provides tools for sorting, filtering, input validation among others



Cell data types, Cell Addressing and Cell referencing methods

- **Labels** – Combination of letters, numbers and special characters.
- **Values** – Numbers and special characters that can be mathematically manipulated.
- **Formulae** – User defined mathematical expression.
- **Functions** – Inbuilt formula.

Cell Addressing

It is a way of identifying contents of a cell using column letter and row number for example C10.

Cell referencing methods

a) **Relative cell referencing** – It changes when a formula is copied from one location to another.

b) **Absolute cell referencing** - It does not change when a formula is copied from one location to another.

c) **Mixed cell referencing** – It partially changes when a formula is copied from one location to another.

d) **Name referencing** – Uses a label assigned to a cell to invoke cell content.

Basic functions and formulae

Some of the most commonly used categories include

i) Statistical functions

Function name	Purpose	Example
CountA	Returns number of all the cells that have an entry in a given range	=CountA(A1:A10)
Average	Calculates mean of values	=Average(B1:B10)
Max	Returns the highest value	=Max(C1:C10)
Min	Returns the lowest value	=Min(A1:A10)
Count	Returns the number of cells with values entries	=Count(B1:B10)

ii) Mathematical functions

Function name	Purpose	Example
Sum	Adds values in a provided range	=Sum(A1:A10)
Product	Multiplies provided values	=Product(B1:B10)
Round	Scales a number to a specified number of decimal places	s =Round(C10,2)
SUM IF ()	Adds the specified cells according to the set criteria	SUM IF (A3:A10"> =100")
ABS()	Returns the absolute value of a number	ABS(-8) returns 8

iii) Logical Functions

Function	Purpose	Example
If	Evaluates a conditional expression that returns true or false	=IF(A3>=90, "A", IF(A3>=70, "B", IF (A3>=50, "C", "FAIL")))
Sumif	Returns the sum of values that meet a given condition	=Sumif(B1:B10, ">=1000")
Countif	Returns the number of cells with entries that meet a given condition	=Countif(C10:C20, "A")
AND	Returns true if all its arguments are true or false if all the arguments are false	=AND(4+3=7, 2+3=5) returns **TRUE**
OR	Returns true if any of the arguments is true or false if both arguments are false	=OR(3+5 =9, 2+3=5) returns **TRUE**

iv) Date and time functions

Function Name	Purpose	Examples
Today()	Returns the current date	=Today()
Now()	Returns the current date and time	=Now()
Day()	Returns the day of a date, represented by a serial number. The day is given as an integer ranging from 1 to 31.	=Day(A2)

Data management tools

i) Forms - facilitate data entry easily and faster in a worksheet database.
ii) Sorting- refers to arranging data in a particular order either alphabetically or numerically starting from the smallest to the biggest.
iii) Filtering - extracts subset of data from a larger list.
iv) Total function – this involves summation of numerical data values.
v) Subtotal function – bases calculations on subsets of data.
vi) Input validation – restricts data entries made in a cell.

Charts or graphs

A chart is a pictorial summary of data in a worksheet.

Chart terminologies

- **Data range** – Group of cells that show the limits or describes data being used in generating a chart.
- **Labels** – Data values represented by data series in a chart.
- **Headings and titles** - Brief information that gives hints to what the data is all about.
- **Legends:** - The key to the chart, identifying which patterns or colours relate to which data series.
- **Axis:** - Vertical or horizontal plane of a chart.
- **Data point** - An individual figure on a chart.
- **Data series** -Are data elements that are used to plot data on a chart, which may appear as bars, lines, pie wedges among others.

Category: - Represent the different data items on X-axis.

Embedded chart - A graph that appears on the worksheet where it was created.

Types of charts

i) Bar Chart- Used for comparing multiple values.

ii) Pie chart – Shows contribution of each value to a total.

iii) Scatter graph – Compares pairs of values.

iv) Line chart – Shows trends over time.

v) Column chart – Compares values across categories.

vi) Area chart – Emphasises differencesbetween several sets of data over a period of time.

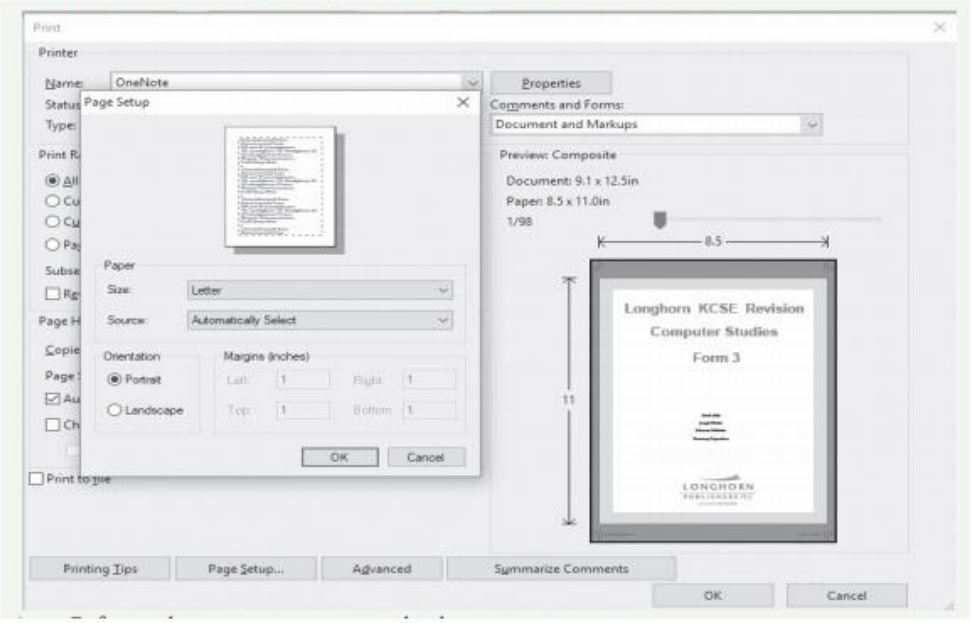
Printing Workbooks

Hardcopies of part of a worksheet, entire worksheet, several worksheets, a selected chart or the entire workbook can be generated. In the printing process the following can be considered:

a) Page setup

The Page Setup option is used to set various printing specifications. It can be accessed from Print.

b) Print preview Print preview displays the worksheet, chart or selected range exactly the way it would appear when printed. Click the **Page Setup button** in the Print Preview window.

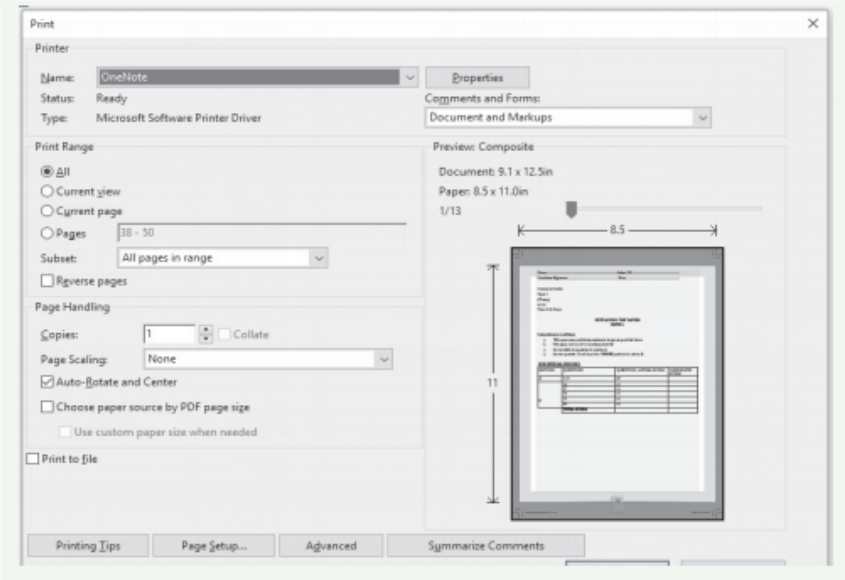


Orientation - Refers to the appearance on paper, landscape or portrait.

Margins Tab - Is used to set the individual margins – top, bottom, left and right – of the printed output.

Scaling - Allows the computer user to reduce or enlarge a document to a size in a percentage, compared to normal.

Selection – Allows the user to print part of the worksheet.



Print options:

Name -Click on the down arrow, to choose a different type of printer, for example, the selected printer in the above dialog box is OneNote. **The Print what** options include:

• Selection - Prints the highlighted worksheet area.

• Entire workbook - Prints all worksheets in the workbook.

• Selected chart - Prints the chosen chart only.

Print range – Determines the number of page(s) to be printed.

Copies – Determines the number of duplicates to print.

Printing – Confirms the printing process by clicking **OK.**

KCSE Revision Questions

KCSE 2006 Paper 1

Qn.17. Distinguish between the following sets of terms as used in spreadsheets.

a) i) Worksheet and workbook. (2 marks)

KCSE 2002 a) Paper 1

Qn .20. b) i) Define the term spreadsheet. (1 mark)

ii) Give two examples of spreadsheet packages available in the market today. (2 marks)

KCSE 2002 Paper 1

Qn.20. c) Explain the following terms as used in a spreadsheet: ii) Cell (1 mark)

KCSE 2001 Paper 1

Qn. 9b. Explain what is meant by automatic recalculation as used in a spreadsheet. (1 mark)

KCSE 2002 Paper

1 Qn. 20 c) Explain the following terms as used in a spreadsheet: i) What if analysis (2 marks)

KCSE 2003 Paper 1

Qn.7. a) Distinguish between labels and formulae with respect to spreadsheets. (2 marks)

KCSE 2002 Paper 1

Qn. 20. c) Explain the following terms as used in a spreadsheet:

iii) Formula (1 mark)

Paper 1

Qn.8. Differentiate between relative cell referencing and absolute cell referencing. (2 marks)

KCSE 2003 Paper 1

Qn.13. A student presented a budget in the form of a worksheet as follows.

	A	B	C
1	ITEM	AMOUNT	
2	FARE	200	
3	STATIONERY	50	
4	BREAD	300	
5	MISCELLANEOUS	150	
6	TOTAL		

The student intends to have spent half the amount by mid-term.

a) Given that the value 0.5 is typed in cell B9, write the shortest formula that would be typed in cell C2 and then copied down the column to obtain half the values in column B.

KCSE 2001 Paper 1

Qn.6. The first column in the table below contains the formulae as stored into the cell F10 of a spreadsheet. Enter the formulae as they would appear when copied to cell M20 of the same spreadsheet.

Formula in F10	Formula in M20
= D10*E10	=K20*L20
= A$25	=H$25
= D13	=D13

KCSE 2005 Paper 1

Qn. 4 The cells K3 to K10 of a worksheet contain remarks on students' performance such as very good, good, fair and fail depending on the average mark. Write a formula that can be used to count all students who have the remark "very good". (3 marks)

KCSE 1999 Paper 1

Qn.9. Worksheet cells are referenced using the column letter and row number For example, D2 is cell in column D and row 2.

Use the sample worksheet provided to answer the questions below.

	A	B	C	D	E	F
1	Month	January	February	March	April	Total
2	Fees	460	460	460	460	
3	Food	300	350	305	270	
4	Electricity	100	100	100	100	
5	Fuel	150	150	150	150	
6	Transport	380	270	150	300	

a) Write down the data type that is stored in cell C5. (1 mark)

b) What cell contains the data item representing transport for the month of February? (1 mark)

c) Write down the formula that may be used to compute the total in cell F6. (1 mark)

KCSE 2013 Paper 1

Qn.6. A retailer uses a spreadsheet program shown below to calculate profits.

	A	B	C	D	E	F
1	Items	Cost Price	Selling Price	Profit per Item	Items sold	Total Profit
2	Item 1	305	350	45	32	1440
3	Item 2	100	120	20	45	900
4	Item 3	200	220	20	32	640
5	Item 4	107	130	23	89	2047

a) Which row contains labels only? (1 mark)

b) Write the formula that has been entered in cell F2. (2 marks)

KCSE 2011 Paper 1

Qn.18. d) Below is a section of a worksheet containing information on household items. Use it to answer the questions that follow.

	A	B	C	D	E
1	**Item Description**	**No of Units**	**Cost per unit**	**Total Cost**	
2	Wheat flour	12	110		
3	Rice	6	145		
4	Sugar	7	140		
5	Salt	2	20		

i) Write a formula to calculate the total cost of rice. (1 mark)

ii) The prices of all items is increased by 10% and the value 10% is placed in cell B8. Using cell addresses with absolute referencing only, write a formula to calculate the new unit price of salt. (2 marks)

iii) Write a function to display the number of cells in which the cost per unit is equal to 110. (2 marks)

iv) Write a function to display the least total cost for all items. (2 marks)

KCSE 2009 Paper 1

Qn.3. A computer accessories vendor needs to order supplies. A spreadsheet is used to calculate the order part of which is shown below

	A	B	C	D
1	Item	Price per unit	Number ordered	Cost (Kshs)
2	56K modem	8,565.00	60	
3	128 MB Ram	4,950.00	40	
4	Pentium IV Processor	13,525.00	55	
5	Total			

a) Write the formula that can be used in:

i) D2 (1 mark)

ii) D5 (1 mark)

b) If a value added tax (VAT) of 16% was charged on each item and the number ordered was decreased by 10%, write a new formula that can be used in D2. (2 marks)

KCSE 2006 Paper 1 A worksheet contains the data shown below.

Cell	A1	A1	A3	C1	C2	C3	G1
Entry	5	7	10	10	15	15	=SUMIF(C1: C3, "<> 10", A1:A3)

Qn.15. State the value displayed in GI.

KCSE 2006 Paper 1

Qn.17. Distinguish between the following sets of terms as used in spreadsheets.

a) i) Worksheet and workbook. (2 marks)

ii) Filtering and sorting. (2 marks)

c) The following is a sample of a payroll. The worksheet row and column headings are marked 1, 2, 3 . . . and A, B, C... respectively.

	A	B	C	D	E	F	G	H
1	NAME	HOURS WORKED	PAY PER HOUR	BASIC PAY	ALLOWANCES	GROSS PAY	TAX DEDUCTIONS	NET PAY
2	KORIR	12	1500					
3	ATIENO	28	650					
4	MUTISO	26	450					
5	ASHA	30	900					
6	MAINA	18	350					
7	WANJIKU	22.5	500					
8	WANYAMA	24.5	250					
9	OLESANE	17	180					
10	MOSETI	33	700					
TOTALS								

Use the following expressions to answer the questions that follow:

- Basic pay = Hours worked x pay per hour
- Allowances are allocated at 10% of basic pay
- Gross pay = Basic pay + allowances
- Tax deductions are calculated at 20% of gross pay
- Net pay = Gross pay - tax deductions.

Write formulae using cell references for the following cells:

i) D2 (1 mark)

ii) E4 (1 mark)

iii) F10 (1 mark)

iv) G7 (1 mark)

v) H5 (1 mark)

KCSE 2005 Paper 1

Qn. 17 c) The following information shows the income and expenditure for "Bebayote" matatu for five days. The income from Monday to Friday was Kshs. 4,000, 9,000, 10,000, 15,000 and 12,000 respectively while the expenditure for the same period was Kshs. 2,000, 3,000, 7,000, 5,000 and 6,000 respectively.

i) Draw a spreadsheet that would contain the information. Indicate the rows as 1,2,3 and the columns as A, B, C (4 marks)

ii) State the expression that would be used to obtain:

I - Monday's profit (2 marks)

II - Total income (2 marks)

III - Highest expenditure. (2 marks)

KCSE 2006 Paper 1

Qn.17. Distinguish between the following sets of terms as used in spreadsheets.

a) i) Filtering and sorting. (2 marks)

KCSE 2011 Paper 1

Qn.18. c) Distinguish between each of the following: i) Axis labels and data labels (2 marks)

KCSE 2007 Paper 1

Qn.9. Explain data series, axis and legend as used in spreadsheet charts: (3 marks)

i) data series

ii) axis

iii) legend

KCSE 2002 Paper 1

Qn.20. c) Explain the following terms as used in a spreadsheet:

iv) Pie-chart. (2 marks)