



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2013/2014**

FIRST YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF BACHELOR OF SCIENCE, BACHELOR OF  
EDUCATION AND BACHELOR OF ARTS WITH INFORMATION  
TECHNOLOGY  
(HOMA BAY CAMPUS)

**SCS 114: INTRODUCTION TO SPREADSHEETS &  
DATABASES**

*Date: 29<sup>th</sup> November, 2013*

*Time: 11.00 a.m. - 1.00 p.m.*

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**INSTRUCTIONS:**

- Answer Question 1 (COMPULSORY) and any other TWO questions.
- Start a new question on a new page.

**Question One (Compulsory, 30 Marks)**

- (a) Define the following Ms Excel 2007 terminologies:
- (i) Name box
  - (ii) Autofill
  - (iii) Present value
- (b) Distinguish between:
- (i) Workbook and worksheet
  - (ii) Relative and absolute cell reference
- (c) State and explain eight different data types supported by Ms Access
- (d) State and explain four components that make up the new look MS Excel window.
- (e) State four applications of spreadsheets

*Use the spreadsheet screenshot below to answer question TWO*

1	A	B	C	D	E	F	G	H	I	J	K
2	RegNo	Name	Eng	GRD	Kisw	GRD	Total	New Total	Rank		
3	001	John	45	D	66		111	138.75			25%
4	002	Mary	56	C	54		110	137.5			
5	003	Otieno	77		55		132	165			
6	004	Musa	60	B	55		115	143.75			
7	005	Were	54	C	67		121	151.25			
8	006	Kipchumba	78	A	89		167	208.75			
9	007	Wamalwa	23	F	78		101	126.25			
10	008	Kamau	45	D	23		68	85			
11	009	Musau	60	B	22		82	102.5			
12	010	Juma	68	B	45		113	141.25			
13	Mean										
14	Mode										
15	MAXIMUM										
16	5th Lowest		56								
17	Median										
18	2nd Highest										
19	50% and above										

**Question Two (20 Marks)**

- (a) State the command used to format cells A1 to I1. (2 marks)
- (b) Explain how you would enter the values in the A3:A12 range and in an efficient manner (2 marks)
- (c) Write a function to calculate the total in cell G5 (2 marks)
- (d) Write formula to determine the average score for Eng subject which is stored in cell C13. (2 marks)
- (e) Write formula/function to determine the score with the highest frequency for Kisw subject which is stored in cell G14. (2 marks)
- (f) Due to poor performance, the school's management decides to increase each student's total score by 25%. Using the value entered in cell K2, write the formula for cell H6. (4 marks)
- (g) An Excel function is used to grade the scores, using the grading system below. State the formula for cell D6. (6 marks)

Mark	Grade
70-100	A
60-69	B
50-59	C
40-49	D
0-39	F

**Question Three (20 Marks)**

- (a) Write a function to display yesterday's date. (3 marks)
- (b) A project is started on 14/1/2012 and requires four hundred (400) working days to complete. Write a function that will return the day that the project is to be completed. (3 marks)
- (c) With reference to the screenshot below, write a function in cell B8 to determine the number of working days in the month of October 2011. (4 marks)

	A	B	C
1	start date	10/1/2011	
2	Final date	10/31/2011	
3			
4	Holidays		
5	Moi Day	10/10/2011	
6	Mashujaa Day	10/20/2011	
7			
8	No. of Working Days	<input type="text"/>	
9			
10			
11			

- (d) As a financial consultant of a client on various bank account investments, write functions to return the present values given the details below:
- i) a \$10,000 investment after one year earning 5 percent annual interest (5 marks)
- ii) a \$10,000 investment after two years earning 5 percent interest per annum compounded monthly (5 marks)

*Use the table below to answer question Four*

**EMPLOYEEDETAILS**

DATEOFEMP	NAME	CATEGORY	RATE/HR	EMP_ID
22/02/2001	Joseph Peter	Senior	500	2034
15/01/2003	Mark James	Junior	250	2021
04/05/2004	Mary Magdy	Senior	3200	2022
17/06/2004	Musa Juma	Junior	2000	2100
14/12/2006	Paul Jones	Junior	260	2123

<b>AYROLL</b>			
<b>AYROLLNUM</b>	<b>HOURS</b>	<b>EMP_ID</b>	<b>SALARY</b>
001.	50,000	2034	
002.	25,000	2021	
003.	32,000	2022	
004.	20,000	2100	
005.	26,000	2123	

**Question Four (20 Marks)**

- (a) Nominate the bested suited field to be the primary key of the database and justify your choice. (3 marks)
- (b) State five principles of good table structure design. (5 marks)
- (c) Design a database structure to hold the data above. (8 marks)
- (d) State the steps for inserting a primary key in Ms Access 2007. (3 marks)
- d). State six advantages maintaining data in Ms Access over Ms Excel (6 marks)

**Question Five (20 Marks)**

- a) Explain the following concepts, stating their usefulness in a database design (6 marks)
- Validity integrity
  - Entity integrity
  - Referential integrity
- b) Explain the role of the following Ms Access 2007 field properties. (6 marks)
- Caption
  - Input mask
  - Validation rule
- c) State and explain four types of database architectures (8 marks)