



MASENO UNIVERSITY
UNIVERSITY EXAMINATIONS 2015/2016

**FIRST YEAR SECOND SEMESTER EXAMINATION FOR THE DEGREE
OF BACHELOR OF SCIENCE BACHELOR OF ARTS AND BACHELOR OF
EDUCATION WITH INFORMATION TECHNOLOGY**

HOMABAY CAMPUS

**UCI 104 INTRODUCTION TO DATA ANALYSIS WITH
SPREADSHEETS**

Date: 29th April, 2016

Time: 800 - 10.00am

INSTRUCTIONS:

- **Answer Question ONE and any other TWO Questions.**
- **Use of mobile phones is prohibited in the examination room.**
- **Start a new question on a new page**



Question 1 (Compulsory, 30 Marks)

- (a) Define the following spreadsheet tools: (6 marks)
- scenario manager
 - solver
- (b) Distinguish between a workbook and a worksheet. (4marks)
- (c) State two ways in which the Currency number format differs from the Accounting format(2 marks)
- (d) State the output of the following functions: (2 marks)
- =ROUNDDOWN(435273.7865,3)
- (e) Explain when to use the following chart types: (4 marks)
- Line chart
 - column chart
- (f) Evaluate the following function and explain your answer: (4 marks)
- =IF(WEEKDAY(TODAY())=1,"Sunday","Working Day")
- Note: Take this exam's date as today's date.**
- (g) State the output of the following formula:
- =TODAY-3 (2 marks)
 - IF(NOT(AND(40<50,30>20)),"Pass","Fail") (2 marks)
- (h) Explain the cause of the following error messages and give a solution to each: (4 marks)
- #VALUE!
 - #NAME?

Use the worksheet below to answer questions 2 and 3

	A	B	C	D	E	F	G	H	I
1	TAHIDI HIGH SCHOOL								
2	FORM II EXAMINATIONS				DATE:				
3	CLASS	STUDENT NAME	MATHS	ENG	C/STUDIES	TOTAL	AVERAGE	GRADE	
4	2A	ALI	67	74	71				
5	2B	MAINA	58	65	56				
6	2D	KIJANA	45	69	70				
7	2C	SHIBE	45	50	49				
8	2C	TAUSI		56	70				
9	2B	SHAH	55	60	34				
10	2C	JAMAL	40	40	35				
11	SUBJECT AVERAGE								
12	MEDIAN								
13									
14									

Note: Pass mark is 40%

Question 2 (20 Marks)

- (a) The results were posted two days after. Write a formula to display the day. (2 marks)
- (b) Write a function to determine the number of students who don't take MATHS in 2B stream. (3 marks)
- (c) Write function to determine the average for stream 2C in English for students with at least 40% in Math. (3 marks)
- (d) Write function to calculate the average for only students who passed in C/Studies from stream 2B. (3 marks)
- (e) Write function to count the number of students who have scored grade C and above in stream 2C. (3 marks)
- (f) State the function that determines the position taken by Shah in the class based on total score. (2 marks)
- (g) A function is used to remark "Pass" or "Fail" if a student Passes in either MATH and ENG or MATH and C/STUDIES. State the function that remarks for MAINA. (4 marks)

Question 3 (20 Marks)

- (a) Write function to determine the second worst student in ENG. (2 marks)
- (b) Write function to determine the standard deviation for MATH. (2 marks)
- (c) Explain the output of the following formula: =MEDIAN(D4:D10). (3 marks)
- (d) Students are to be graded, using the Maseno University grading system, based on the average mark.
Note: The function should not grade students who did not sit the exam, and if the mark less than 0 or greater than 100 it should display "Error". State the function for cell H6. (6 marks)

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

- (e) As an IT manager of your company, you advised top management to be using the MS Excel 2007 Solver feature in making key decisions. One day the production manager sort to find out what combination of inputs would yield the optimum profits. However Excel reported that there is no solution available to the given constraints. However it's believed that a solution exists. Identify possible remedies to this situation. (7 marks)

Question 4 (20 Marks)

Use the spreadsheet below to answer parts (a) and (b)

ID	Product Name	Unit Price In Stock	On Order	Reorder Level
1	Chai	\$18.00	39	0
2	Chang	\$19.00	17	40
3	Aniseed Syrup	\$10.00	13	70
4	Mishi Kobe Niku	\$97.00	29	0
5	Iura	\$31.00	31	0

Product	
Price:	
In Stock:	
On Order:	
Reorder Level:	
Value of Inventory:	
Value on Order:	
Average Reorder Cost:	

(a) Using VLOOKUP function, state the function for cell:

i) C4

ii) C5

iii) C6

(6 Marks)

(b) Use the values obtained to calculate the value for cell

i) C9.

ii) C10

iii) C11

(6 marks)

Use the spreadsheet below to answer parts (c) to (f)

	A	B	C	D	E
1	Q4. c)				
2	Principal	Rate p.a	Amount	Payments	
3	500	4%	4500	150	
4					
5	Q4. d)				
6	Principal	Years	Rate p.a	Servicing Amount	
7	10000	3	5%	2000	
8					
9	Q4. e)				
10	Principal	Years	Rate p.a.	Amount	
11	10000	30	7%	1000000	
12					
13	Q4. f)				
14	Principal	Years	Payments		
15	5000	4	117		
16					

- (c) Write function to determine monthly contribution for terms stated in Q4 c) in the figure above. (2 marks)
- (d) Write a function to determine the amount owed to a bank after a loan repayment with reference to terms specified as Q4. d) above. (2 marks)
- (e) Write function to determine the monthly contribution to an investment to realize the set amount with reference to details headed Q4. e) above. (2 marks)
- (f) Write function to determine the interest rate p.a. the terms headed Q 4. f) above attracts. (2 marks)

QUESTION 7 (20 Marks)

Use the screenshot below to answer the questions in this section where applicable.

	A	B	C	D	E	F	G	H
1	Dates							
2	Today's date							
3	Yesterday's date							
4								
5	Project Management							
6	Start Date	11/1/2011						
7	Duration	200						
8	End Date							
9								
10	October Working Days							
11	Start Date							
12	End Date							
13								
14	Holiday							
15	Mol Day	10/10/2011						
16	Mashujaa Day	10/20/2011						
17	Mothers Day	10/31/2011						
18								
19	No. of Working Days							
20								
21								

Date	Day of the Week
11/1/2011	
11/2/2011	
11/3/2011	
11/4/2011	
11/5/2011	
11/6/2011	
11/7/2011	
11/8/2011	
11/9/2011	
11/10/2011	
11/11/2011	

- Write function to determine the number of working days in the month of October. (3 marks)
- Write function to determine a projects end date given the information above. (2 marks)
- Write function in cell F4 to determine the day of the week e.g. Monday, Tuesday etc. (6 marks)
- Explain three limitations of the Scenario Manager feature as a decision support tool for the top management of an organization. (3 marks)
- Describe the following charts and state what kind of information they are used to convey. (6 marks)
 - Columnar
 - Area
 - Scatter