



**JARAMOGI OGINGA ODINGA UNIVERSITY OF SCIENCE AND TECHNOLOGY**  
**SCHOOL INFORMATICS AND INNOVATIVE SYSTEMS**  
**UNIVERSITY EXAMINATION FOR THE BACHELOR'S DEGREE**  
**1<sup>ST</sup> YEAR 2<sup>ND</sup> SEMESTER 2013/2014 ACADEMIC YEAR**  
**CENTRE: MAIN**

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**COURSE CODE: SCS 114**

**COURSE TITLE: INTRODUCTION TO SPREADSHEETS AND DATABASES**

**EXAM VENUE: AH**

**STREAM: BSc. Computer Security & Forensics**

**DATE: 13/12/2013**

**EXAM SESSION: 9.00 – 11.00 AM**

**TIME: 2 HOURS**

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**Instructions:**

- 1. Answer question 1 (Compulsory) and ANY other 2 questions.**
- 2. Candidates are advised not to write on the question paper.**
- 3. Candidates must hand in their answer booklets to the invigilator while in the examination room.**

**Question one 30marks**

Describe the term “normalization” [2 marks]

I. Using the table below illustration, describe how data can be normalized [10 marks]

**Activities Table**

Student	Activity1	Cost1	Activity2	Cost2
John Smith	Tennis	\$36	Swimming	\$17
Jane Bloggs	Squash	\$40	Swimming	\$17
John Smith	Tennis	\$36		
Mark Antony	Swimming	\$15	Golf	\$47

B) Discuss the following levels of the database development process;

I. physical design [2 marks]

II. conceptual level [2 marks]

III. logical design [2 marks]

C) Explain how to execute the following activities in excel

I. Set column/row width/height [3 marks]

II. Merge and center cells [3 marks]

A) Outline four advantages of electronic spreadsheets over manual spreadsheets. [6 marks]

**Question two**

A) Below is a list of potential entities for a hotel database;

I. customer

II. meal

III. service

Identify at least three attributes for each of these entities (including primary and/or foreign

Keys) and draw an entity-relationship diagram illustrating these entities (10 marks)

a) Outline four major uses of MS Excel in society today (2 marks)

b) Distinguish between relative and absolute cell referencing (2 marks)

c) Distinguish between a formula and a function (2 marks)

C) List any four factors you may consider when choosing the appropriate dbms. (4 marks)

**Question three 20marks**

I. Define the term “data integrity” (2 marks)

II. Identify two principle integrity rules applied to a primary key. (2 marks)

III. Highlight two ways of enforcing security on a database. (4 marks)

IV. Discuss the steps involved in the database development lifecycle. (12 marks)

**Question four 20marks**

A) With respect to information management, compare the following concepts;

I. File system and dbms (2 marks)

II. Tuple and attribute (2 marks)

III. Instance and schema (2 marks)

B) Discuss the limitations of having a database system to manage organizational data. (6 marks)

C) Describe the ways in which information in a database can be manipulated. (2 marks)

D) Identify the roles of the following people

I) Database designer (2 marks)

Ii) Database administrator (2 marks)

Iii) Database user (2 marks)

### Question five

a) A computer lecturer uses a spreadsheet to record scores of students. The spreadsheet below shows the test scores grades and position of the pupils. (9 marks)

	A	B	C	D	E	F	G
1	Id no.	Names	Course	Marks	Grade	Status	Position
2	1184	Kamau	Computer studies	60	C	Pass	4
3	1284	Otieno	Data communication	90	A	Pass	1
4	1384	Wafula	Html	33	D	Fail	7
5	1484	Dinda	Dbms	56	D	Fail	5
6	1584	Olwande	Software develoment	70	B+	Pass	3
7	1684	Shisia	Software arch.	34	D	Fail	6
8	1784	Mutia	Calculus	78	B	Pass	2

- i. Write down the formula which should go in cell E2
- ii. Write down the formula which should go in cell F4
- iii. Write down the formula which should go in cell G8

B) Structured query language is the standard language for relational database management systems. Sql statements are used to perform tasks. Name and explain any three standard sql commands you know. (3 marks)

C) You have been requested usesql to write the statements that will (8 marks)

- I. Create a table employees
- II. Display the first name, last name, and city for everyone that's not from busia