



THE MOMBASA POLYTECHNIC UNIVERSITY COLLEGE

(A Constituent College of Jkuat)

Faculty of Engineering and Technology

DEPARTMENT OF BUILDING & CIVIL ENGINEERING

UNIVERSITY EXAMINATION FOR DEGREE IN BACHELOR OF SCIENCE IN CIVIL ENGINEERING

EIT 4102 : FUNDAMENTALS OF COMPUTING

SMA 2174 : INTRODUCTION TO COMPUTER SCIENCE

END OF SEMESTER EXAMINATIONS

SERIES: AUGUST/SEPTEMBER 2011

TIME: 2 HOURS

Instructions to Candidates:

You should have the following for this examination

- *Answer Booklet*

This paper consist of **FIVE** questions in **TWO** sections **A & B**

Answer question **ONE (COMPULSORY)** and any other **TWO** questions

Maximum marks for each part of a question is as shown

This paper consists of **FOUR** printed pages

SECTION A (Compulsory)

a) Define the following terms in the context of computer fundamentals:

i. Computer system

ii. Desktop

iii. (2 marks)

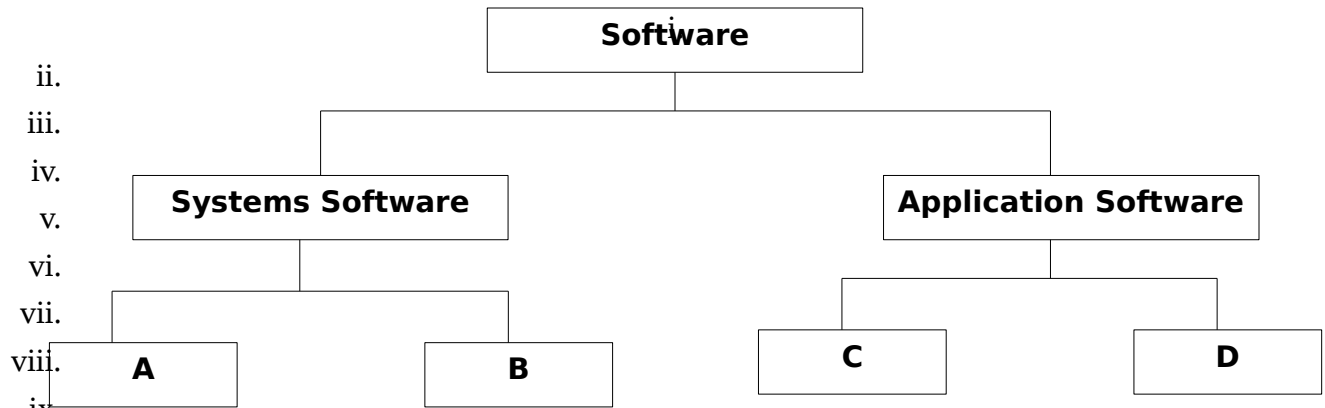
b) Differentiate between:

i. Data and information

ii. Analog computer and Digital computer

iii. (4 marks)

c) The diagram below gives a schematic representation of computer software.



- ii.
- iii.
- iv.
- v.
- vi.
- vii.
- viii.
- ix.
- x.
- xi.
- xii. Identify the parts labeled A, B, C & D and give one example of each.

xiii. (4 marks)

- d) The keyboard is used as the basic input device for most computers. Identify and describe the use of the four major keys that are commonly found on a computer keyboard
 - i. (8 marks)
- e) Your boss has asked you to assist with the acquisition of office printer to support internal communication or correspondence. Given a laser printer and dot matrix printer, which of the two printers will you recommend? Justify your choice.
 - i. (4 marks)
- f) Write the following acronyms in full and give their functions in the computer system:
 - i. MOS
 - ii. BIOS
 - iii. (4 marks)
- g) List four factors to consider when selecting hardware.
 - i. (2 marks)

ii. SECTION B
iii.
iv. Question 2

- v.
- a) Differentiate between a bit and a byte.
 - vi. (2 marks)
- b) Give two reasons why the binary number system is utilized for modern electronic digital computers.
 - vii. (2 marks)
- c) Most operating systems include several programs that can be used to manage, protect data and improve the performance of the computer. Briefly discuss any four management/maintenance programs (processes) that windows OS provide to keep the computer in top working condition.
 - viii. (8 marks)
- d) State the importance of the following tools:
 - ix. Control panel
 - x. Windows firewall
 - xi. Disk manager

xiii. (4 marks)

e) Why is the concept of Boolean algebra important to the digital computers and other digital systems? Give at least two reasons.

xiv. (4 marks)

xv. Question 3

xvi.

a) Name the major technology that distinguishes the following computer generations (i.e. 1st to 5th).

xvii. (5 marks)

b) Briefly explain the role played by the following Computer system hardware components:

- | | |
|------------------------|---------------------------------|
| i. Input | iv. Arithmetic Logic Unit (ALU) |
| ii. Output | v. Cache |
| iii. Control Unit (CU) | |

vi. (5 marks)

c) Briefly explain the following categories of programs with an example of each:

- | | |
|----------------------|--------------------------|
| i. Word Processor | iv. Presentation package |
| ii. Spreadsheet | v. CAD package |
| iii. Database System | |

vi. (10 marks)

vii. Question 4

a) Explain the following mouse operations:

- | | |
|------------------|----------|
| i. Click | iv. Drag |
| ii. Double click | v. Drop |
| iii. Right click | |

i. (10 marks)

b) State four major facilities that are provided by a Word Processor.

ii. (4 marks)

c) Perform the following conversions:

- i. Convert binary 00011011_2 to decimal
- ii. Convert decimal 278_{10} to binary
- iii. Convert $19B116_{16}$ to binary

(6 marks)

iv. Question 5

v.

a) Using a well-labeled diagram, illustrate the functional components of a Computer System.

vi.

(12 marks)

b) Discuss any four areas/sectors where computers are applied, stating their major functional importance.

vii. (8marks)

viii.

ix.

x.