**W1-2-60-1-6**

##  JOMO KENYATTA UNIVERSITY

**OF**

**AGRICULTURE AND TECHNOLOGY**

# University Examinations 2014/2015

**FIRST YEAR FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY**

**BCT 2101 : INTRODUCTION TO COMPUTERS AND OPERATING SYSTEMS**

**DATE: AUGUST 2015 TIME: 2 HOURS**

**INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER**

 **TWO QUESTIONS.**

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**QUESTION ONE (30 MARKS)**

(a) Define the following terms: [10 marks]

1. Operating system.
2. Expert system.
3. Firewall.
4. Latency.
5. Disk compression.

(b) List and explain characteristics that distinguish micro-processors. [3 marks]

(c) Differentiate: program files and data files. [2 marks]

(d) How does a worm vary from a virus? [3 marks]

(e) List and explain modes of operation that a processor can exhibit. [3 marks]

(f) Explain reasons why it is recommended to partition the hard disk before any installation. [3 marks]

(g) Explain the operation of the following two kinds of printers: [3 marks]

1. Inkjet printer.
2. Dotmatrix printer.

(h) State and explain any three functions of an operating system. [3 marks]

**QUESTION TWO (20 MARKS)**

(a) List and explain any three types of registers. [3 marks]

(b) Explain the following storage media characteristics: [8 marks]

1. Addressability.
2. Accessibility.
3. Mutability.

(c) Name and explain ways in which conventional memory can be maximized under disk operation system. [4 marks]

(d) Explain the concept of virtual memory in computer storage. [5 marks]

**QUESTION THREE (20 MARKS)**

(a) Describe the classification of computers according to size and power.

[8 marks]

(b) Discuss the development of computers as organized into generations.

[12 marks]

**QUESTION FOUR (20 MARKS)**

(a) Explain the following types of networks: [3 marks]

 (i) WAN

 (ii) WLAN

 (iii) Storage area network.

(b) What capabilities does UNIX operating system have over other operating systems? [4 marks]

(c) Explain the operation of a Trojan. [3 marks]

(d) What factors would you consider when selecting an appropriate operating system? [6 marks]

(e) Discuss the central processing unit as a computer component. [4 marks]