



# MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)

University Examinations 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR FIRST SEMESTER EXAMINATION FOR DEGREE IN

BACHELOR OF ECONOMICS AND FINANCE

BACHELOR OF ECONOMICS

EAE 100: ECONOMICS OF INFORMATION TECHNOLOGY

Date: 11/12/2014

Time: 8:30 – 1 0:30 AM

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## INSTRUCTIONS

Answer question *ONE* and any other *TWO* questions

**Time: 2Hours**

### **QUESTION ONE (30 MARKS)**

- a) Using a diagram explain the functional components of a computer. **[5 Marks]**
- b) Your friend, George, collects all kinds of music. He wants to record his collection into CD-ROMs, but he is not quite sure what kind of CD-ROM drive and CD-ROMs to buy. George's neighbour, Mary is a writer. She does all the composition on her PC. She found out the other day her PC was infected by computer virus, and much of her creations were destroyed. Hoping the same disaster will never happen again, she plans to do daily backup onto a CD-ROM. The situation is again she does not know exactly what drive and disk she should buy. Knowing you're taking a computer course, they come to you for help.
- i. All George needs is to record the music onto the CD-ROMs once. What kind of CDs would you recommend and why? **[3 Marks]**
  - ii. Mary's case is slightly different. She needs to write her data on the CD-ROMs repeatedly and keeps on updating the CD-ROMs. What type of CD would you recommend and why? **[3 Marks]**
  - iii. What would precautions would Mary have taken to avoid the infection of her files by computer viruses. **[3 Marks]**

- c) Distinguish the following concepts **[10 Marks]**
- i. System Software and Application Software.
  - ii. Hardware and Software.
  - iii. Analogue Computer and Digital computers.
  - iv. Compiler and Interpreter
  - v. RAM and ROM

- d) Briefly discuss the importance of cache memory in the performance of a computer using the different types of cache memories as example **[6 Marks]**

**QUESTION TWO (20 MARKS)**

- a) What is an operating system? Explain three basic functions of an operating system. **[8 Marks]**
- b) Define software maintenance and highlight the difference between software maintenance and software enhancements **[4 Marks]**
- c) List five major kinds of work performed under the term software maintenance **[4 Marks]**
- d) Explain two characteristics of each of the following **[4 Marks]**
- i. Mini computers
  - ii. Microcomputers

**QUESTION THREE (20 MARKS)**

- a) Explain the various methods of classifying computers **[4 Marks]**
- b) Distinguish between the following terms as used in computer data processing:
- i. Data
  - ii. Information
  - iii. Data processing
  - iv. Data processing system **[8 Marks]**
- c) Identify and briefly discuss the four main data processing activities **[8 Marks]**

**QUESTION FOUR (20 MARKS)**

- a) Computers have evolved through generations over the years. State and explain the generations computers have gone through **[10 Marks]**
- b) Define Intellectual Property Rights and briefly describe five types of IPRs **[10 Marks]**

**QUESTION FIVE (20 MARKS)**

- a) Using examples, briefly discuss the concept of switching costs and lock-in in relation to the Information Technology industry **[6 Marks]**
- b) Software is an integral part of Information Technology without which computers would be rendered useless making software development very important. Discuss the different levels of programming languages in each case stating the tool used to translate the program written by the programmers into machine language **[8 Marks]**
- c) Discuss the concept of differentiation of products and prices as it applies to Information Technology **[6 Marks]**