



MACHAKOS UNIVERSITY COLLEGE

(A Constituent College of Kenyatta University)
University Examinations for 2015/2016 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

**FIRST SEMESTER EXAMINATION FOR
DIPLOMA IN ELECTRICAL AND ELECTRONICS ENGINEERING
COMPUTER PRINCIPLES**

DATE: 9/8/2016

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

Answer Question ONE and any other two questions

QUESTION ONE (COMPULSORY)

- a) Define the following terms in respect to Programming (4 marks)
 - i) Syntax
 - ii) Machine language
 - iii) Object Code
 - iv) Compiler.
- b) Suppose a microprocessor is instructed to MULTIPY 7 and 4.
 - i) Illustrate how the above would be stored in the main memory. (3 marks)
 - ii) Describe the sequence of steps that will take place for the above operation. (4 marks)
- c) Illustrate and briefly describe the fetch execute cycle. (6 marks)
- d) Indicate the functions of the following memories. (3 marks)
 - i. Buffer
 - ii. Cache
 - iii. Virtual
- e) Leo intends to upgrade his computer. List two examples of such upgrades. (2 marks)
- f) Outline two advantages of high level programming languages. (2 marks)

- g) Describe the following computer crimes. (6 marks)
- i) Sabotage
 - ii) Cracking
 - iii) Tapping

QUESTION TWO

- a) The hard disk is the most popular backup device. Analyse three reasons why this is so. (6 marks)
- b) Outline four features of the main memory. (4 marks)
- c) Other than cost, outline three considerations when choosing a backup. (3 marks)
- d) Outline two strengths and two limitations of magnetic tapes as storage devices. (5 marks)
- e) List two control measures against hard disk crash. (2 marks)

QUESTION THREE

- a) Differentiate between CISC and RISC processors. (4 marks)
- b) Describe the following registers. (4 marks)
- i) Instruction
 - ii) Address
 - iii) Accumulator
 - iv) Storage
- c) Describe the following in respect to computer security.
- i) Eavesdropping
 - ii) Surveillance
 - iii) Industrial Espionage (6 marks)
- d) Describe the two section of the ALU. (2 marks)
- e) List four advantages of the e-mail over traditional mail. (4 marks)

QUESTION FOUR

- a) You have been invited as a guest speaker for a forum on computer security. Write shorts on the following areas as part of your preparation. (12 marks)
- i. Audit trail
 - ii. Data Encryption
 - iii. Log files
 - iv. Firewalls
- b) Use a diagram to illustrate the difference between bus, star and ring topologies (6 marks)
- c) Indicate two strengths of the fiber optics as communication medium. (2 marks)

QUESTION FIVE

- a) Outline three control measures against computer viruses. (3 marks)
- b) Describe **three** variations of compact disks. (6 marks)
- c) Differentiate between simplex and half duplex transmission. Use an example in each case. (4 marks)
- d) Explain any three strengths and any two limitations of networking. (5 marks)
- e) Describe any two computer buses. (2 marks)