



MACHAKOS UNIVERSITY

University Examinations for 2016/2017

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

SECOND YEAR FIRST SEMESTER EXAMINATION FOR DIPLOMA IN
ELECTRICAL ENGINEERING POWER

EED 208: COMPUTER PRINCIPLES

DATE: 5/6/2017

TIME: 8:30 – 10:30 AM

INSTRUCTIONS

Answer Question One and Any Other Two Questions

SECTION A (COMPULSORY)

QUESTION ONE (30 MARKS)

- a) Write the following abbreviations in full.
- i. PROM (1 mark)
 - ii. EPROM (1 mark)
 - iii. CD-RW (1 mark)
 - iv. DVD-R (1 mark)
- b) Define the following terms in the context of computer technology.
- i. Cache memory (2 marks)
 - ii. Micro-programme (2 marks)
 - iii. Co-processor
- c) Distinguish between the following pairs of computer terms.
- i. Data bus and control bus (2 marks)
 - ii. Direct access memory and sequential access memory (2 marks)
 - iii. SRAM and DRAM (2 marks)
 - iv. PROM and EPROM (2 marks)
- d) Stating two examples in each case, contrast the following pairs of ICT terms.
- i. Internal memory and external memory (2 marks)
 - ii. Magnetic storage and optical storage (2 marks)

- iii. Register and bus (2 marks)
- e) Fill in the following dashes.
 - i. 1TB = _____ MB _____ bytes (2 marks)
 - ii. 1GB = _____ KB _____ bytes (2 marks)
- f) State two advantages and two disadvantages of cache memory. (4 marks)

QUESTION TWO (20 MARKS)

- a) State four characteristics of auxiliary memory. (4 marks)
- b) Outline four factors that affect the choice of memories in a computer system. (4 marks)
- d) Explain two applications of registers in a digital computer. (4 marks)
- c) With the aid of a well-labelled block diagram, explain the CPU of a digital computer. (8 marks)

QUESTION THREE (20 MARKS)

- a) Explain the three computer buses. (6 marks)
- b) Explain the historical evolution of secondary storage media in the ICT sector. (8 marks)
- c) With the aid of a well-labelled block diagram, explain the fetch and execute cycle. (6 marks)

QUESTION FOUR (20 MARKS)

- a) Define the term addressing mode as applied in microcomputers. (2 marks)
- b) Compare and contrast the following pairs of computing terms.
 - i. Control bus and address bus (4 marks)
 - ii. Cache memory and flash memory (4 marks)
 - iii. Magnetic tape and magnetic drum (4 marks)
- c) Explain three methods by which computer memory can be accessed. (6 marks)

QUESTION FIVE (20 MARKS)

- a) State two advantages of the virtual memory. (2 marks)
- b) Distinguish between internal and external memory, explaining how each is accessed. (6 marks)
- c) Show the steps involved when a computer subtracts 3 from 5. (4 marks)
- d) Explain the function(s) of the following processor unit components.
 - i. Instruction register (2 marks)
 - ii. Bus (2 marks)
- e) i) Explain the term addressing modes as applied in microcomputer systems. (2 marks)
- ii) Explain three addressing modes in a microprocessor. (2 marks)