



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2009/2010

INSTITUTIONAL BASED PROGRAMME

EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE

(COMPUTER TECHNOLOGY)

SCT 206: COMPUTER ARCHITECTURE

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DATE: Friday, 3rd September, 2010

TIME: 2.00 p.m. – 4.00 p.m.

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INSTRUCTIONS

1. This Paper is divided into two section A and B.
2. Question ONE in Section A is Compulsory and then answer any other Two questions from Section B.

SECTION A

Question 1 (30 marks)

- a) State and explain the THREE characteristics of memory. (8 marks)
- b) Distinguish between internal and external architecture of a computer. (6 marks)
- c) Identify and explain the FOUR types of interrupts. (8 marks)
- d)
 - i) Define the term Bus as used in computer Architecture. (2 marks)
 - ii) Identify and explain the THREE main types of Buses. (8 marks)

SECTION B

Question 2 (20 marks)

- a) Explain briefly the THREE components of a programmable machine. (8 marks)
- b) State the characteristics of the following types of RAM memory and state where each is best applied.
 - i) SRAM
 - ii) DRAM

Question 3 (30 marks)

- a) Explain using a well-labeled diagram the Instruction cycle with Interrupts. (10 marks)
- b) Describe the Bus interconnection structure used to interconnect the major components CPU, Memory and the I/O module outlining its main characteristics. (10 marks)

Question 4 (20 marks)

- a) Briefly explain multi-level architecture.
- b) Distinguish between internal and external memory explaining how each is assessed. (10 marks)

Question 5 (20 marks)

- a) Distinguish the following ? RAID architecture characteristics.
 - i) Disk mirroring
 - ii) Parity
 - iii) Disk Striping (10 marks)
- b) Explain using a diagram, the basic architecture or organization of an I/O module. (10 marks)