
CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

FIRST YEAR EXAMINATION FOR THE AWARD OF DIPLOMA IN COMPUTER SCIENCE

COSC 0110: COMPUTER ARCHITECTURE

STREAMS: DIP COMP SCI Y1S1

TIME: 2 HOURS

DAY/DATE: THURSDAY 8/08/2019

8.30 A.M - 10.30 A.M.

INSTRUCTIONS:

- Answer question **ONE** and **TWO** other questions
- Do not write anything on the question paper
- This is a **closed book exam**, no reference materials are allowed in the examination room
- There will be **NO** use of mobile phones or any other unauthorized materials
- Write your answers legibly and use your time wisely.

SECTION A

QUESTION ONE (30 MARKS)

- a) STATE The Difference between a processor and an operating system [4 Marks]
- b) What do you understand by the term processor speed? [2 Marks]
- c) Convert 11101100101001 into a hexadecimal number. [4 Marks]
- d) List FOUR Functional components of a computer system? [4 Marks]
- e) Explain these terms in regard to computer architecture:
- i. Instruction set [2 Marks]
 - ii. Stored Program concept [2 Marks]

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- iii. Word [2
Marks]
- f) While giving examples explain what input and output peripherals are: [6
Marks]
- g) What is the difference between ASCII and Unicode? [4
Marks]

SECTION B (ANSWER ANY TWO QUESTIONS ONLY!!)

QUESTION TWO (20 MARKS)

- a) What is a CPU? [2
Marks]
- b) With the aid of a diagram explain the components of a CPU. [8
Marks]
- c) List two MODERN CPU Vendors [2 Marks]
- d) Differentiate between:
- i. X86 Architecture and X64 Architecture [4
Marks]
 - ii. Memory Read Operation and Memory Write Operation [4 Marks]

QUESTION THREE (20 MARKS)

- a) Explain the three types of memory? [6 Marks]
- b) What is the difference between RAM and ROM in regard to main memory? [4
Marks]
- c) What are different types of interrupts in FETCH CYCLE? [4 Marks]
- d) Draw a state diagram of instruction execution cycle with interrupts [6 Marks]

QUESTION FOUR (20 MARKS)

- a) How can we check to detect for errors in a message that is transmitted? [3 Marks]
- b) What are the types of system buses? [3 Marks]
- c) For the following memory space, what would it look like after executing the assembly code below: [8
Marks]

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Address	Contents
99	6
100	6
101	8
102	9

LOAD 100
ADD 101
DIV #7
STORE 102

- d) Write some assembly code to do the following:
34 + 35 and store in memory location 100 [6 Marks]

QUESTION FIVE (20 MARKS)

- a) In regard to your understanding, explain what is pipelining in computer architecture and giving a real life example discuss the hazards and overcoming techniques in pipelining. [20 Marks]
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