THE UNIVERSITY OF ZAMBIA, SCHOOL OF NATURAL SCIENCES

DEPARTMENT OF COMPUTER SCIENCE

2018/2019 CSC 2111 CONTINUOUS ASSESSMENT #1

INSTRUCTIONS: Answer ALL questions. DURATION: 1 HOUR

QUESTION ONE

i. Distinguish between computer architecture and computer organisation. [5]
ii. Distinguish between input-output and data communication process. [5]
iii. Explain the significance of viewing a computer as a hierarchical system. [5]

QUESTION TWO

ENIAC is an important case example in the history of computing. [15]

i. What does the acronym ENIAC stand for?
ii. To which generation did it belong?
iii. What type of computer was ENIAC believed to be?
iv. When and where was it invented, and by whom?
v. What was the primary disadvantage of the ENIAC?

QUESTION THREE

Consider a computer M_2 with the following CPIs for instructions:

Type A CPI = 1.3; Type B CPI = 1.7; Type C CPI = 2.1; Type D CPI = 2.4; and Type E = 2.7

i. Given a Program P_1 with the following mix of instructions:

Type A = 15 %; Type B = 25%; Type C = 27 %; Type D = 3 %; and Type E = the remaining instructions.

30%

a. Calculate the average CPI of Machine M_2 **(10 marks)**

b. Calculate the execution time of P_1 on M_2 if I_C = 21,131 and clock rate is 3.4 GHz. **(10 marks)**