



[Knowledge for Development]

**KIBABII UNIVERSITY**

[KIBU]

**UNIVERSITY EXAMINATIONS  
2021/2022 ACADEMIC YEAR**

**END OF SEMESTER EXAMINATIONS  
YEAR ONE SEMESTER TWO EXAMINATIONS**

**FOR THE DEGREE IN  
COMPUTER SCIENCE**

**COURSE CODE : CSC 212  
COURSE TITLE : COMPUTER  
ARCHITECTURE**

**DATE: 02/02/2022**

**TIME: 02:00 P.M. – 04:00 P.M.**

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**INSTRUCTIONS TO CANDIDATES**

**ANSWER QUESTIONS ONE AND ANY OTHER TWO.**

### **QUESTION ONE [COMPULSORY] [30 MARKS]**

- a. Differentiate between the Intel x86 and the ARM architecture computer families [4 marks]
- b. Explain the three von Neumann architecture design concepts [6 marks]
- c. What do you understand by the term Pipeline Hazards [2 marks]
- d. Discuss the Execute Cycle [6 marks]
- e. Explain the three approaches to achieving increased processor speed. [6 marks]
- f. Explain the two types of virtual machines that exist. [4 marks]
- g. Differentiate between the Web and the Internet. [2 marks]

### **QUESTION TWO [20 MARKS]**

- a. State and explain the Von Neumann's earlier proposal of a computer system [10 marks]
- b. Until the instruction is actually executed, it is impossible to determine whether the branch will be taken or not. Discuss five approaches that have been taken for dealing with conditional branches. [10 marks]

### **QUESTION THREE [20 MARKS]**

- a. Discuss the various classifications of Micro instructions. [10 marks]
- b. Describe the general structure of the IAS computer [10 marks]

### **QUESTION FOUR [20 MARKS]**

- a. PCI may be configured as a 32- or 64-bit bus. There are 49 mandatory signal lines for PCI which are divided into several functional groups. Discuss the functional groups? [14 Marks]
- b. With an example explain what you understand by the term interrupt. [6 marks]

**QUESTION FIVE [20 MARKS]**

- a. With the aid of a block diagram discuss the Control Unit with the logic required to perform its sequencing and execution functions. [10 marks]
- b. Explain Five design elements that serve to classify and differentiate buses [10 marks]