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[Knowledge for Development]

KIBABII UNIVERSITY

[KIBU]

**UNIVERSITY EXAMINATIONS
2019/2020 ACADEMIC YEAR**

**SPECIAL/SUPPLEMENTARY EXAMINATIONS
YEAR ONE SEMESTER TWO EXAMINATIONS**

**FOR THE DEGREE IN
COMPUTER SCIENCE**

**COURSE CODE : CSC 120/212
COURSE TITLE : COMPUTER
ORGANIZATION AND
ARCHITECTURE**

DATE: 01/02/2021

TIME: 2:00 P.M – 4:00 P.M.

INSTRUCTIONS TO CANDIDATES

ANSWER QUESTIONS ONE AND ANY OTHER TWO.

QUESTION ONE [COMPULSORY] [30 MARKS]

1. Give four examples of digital systems. [4 marks]
2. Compare and contrast between an analog and a digital signal. [8 marks]
3. All computer instructions are usually composed of two components i.e. [2 marks]
4. Differentiate with examples between single user OS and multi user OS. [6 marks]
5. There are two types of virtual machines that exist. State and explain [4 marks]
6. A programming language specification can take several forms. Explain [6 marks]

QUESTION TWO [20 MARKS]

1. List and explain any five Basic components of the Web. [10 marks]
2. Explain the term Human-computer interaction [2 marks]
3. Define the term Operating System. [1 marks]
4. List and explain the four major components of a computer: [5 marks]
5. Differentiate between the Web and the Internet. [2 marks]

QUESTION THREE [20 MARKS]

1. Describe the instruction cycle. [12 marks]
2. Differentiate between High-Level and Low-level computer languages [6 marks].
3. Define the term programming language [2 marks]
4. What do you understand by the term register? [2 marks]

QUESTION FOUR [20 MARKS]

1. Give the name of the following registers and their description [10 marks]

AC
DR
TR
IR
AR

2. Define the following terms as used in programming: [4 marks]
 - a. Specification
 - b. Implementation
3. Convert the following numbers:
 - a. 25_8 to Binary [1 marks]

b. 15_{16} to Decimal

[2 marks]

c. 10101_2 to Octal

[2 marks]

d. 29_{10} to Binary

[1 marks]

QUESTION FIVE [20 MARKS]

1. Define the term virtual machine.

[2 marks]

2. When evaluating a current user interface, or designing a new user interface, it is important to keep in mind several experimental design principles: List and explain any three design principles.

[6 marks]

3. Describe any five functions of an operating system.

[10 marks]

4. Differentiate between machine language and assembly language.

[2 marks]