

KENYA METHODIST UNIVERSITY

**END OF 3RD TRIMESTER 2015 (SB) EXAMINATION**

**FACULTY : EDUCATION, ARTS AND SCIENCES**

**DEPARTMENT : EDUCATION**

**UNIT CODE : CISY 201**

**UNIT TITLE : COMPUTER ORGANIZATION & ARCHITECTURE**

**TIME : 2 HOURS**

**INSTRUCTIONS**

* ***Answer Question One and any other Two Question*s**

**Question One**

1. Give short notes on the following types of computer memory and their application:
2. Cache (3 Mks)
3. Registers (3 Mks)
4. Buffer (3 Mks)
5. Describe the components of instructions after. (4 Mks)
6. Name the two most popular disk interface standards used on PC and server systems. Briefly outline the advantages of each of the two standards. (4 Mks)
7. With the aid of a diagram, describe the general structures of an I/0 module an explain its functions. (5 Mks)
8. Analyse the basic instructions cycle with provision for interrupts. (4 Mks)
9. Explain the basic concept of superscalar processor architecture. (3 Mks)
10. In context of bus interconnection, explain timing. (1 Mk)

**Question Two**

1. Discuss the four basic programming and control techniques of the I/O module. (8 Mks)
2. Explain the four structural components of a computer that forms the basis of computer architecture and organization. In addition, explain the performance related issues of each of the components. (8 Mks)
3. Describe the fetch execute cycle. (4 Mks)

**Question Three**

1. Describe how hard desk is internally structured and explain the factors affecting its performance. (10 Mks)
2. What are the roles of registers in CPU? Describe four kind of register in CPU and clearly state their functions. (5 Mks)
3. Describe DMA (Direct Memory Access). (5 Mks)

**Question Four**

1. Describe the high performance bus structure and comment on how it was able to deal comment on how it was able to deal with the limitation of traditional bus structure. (4 Mks)
2. Instruction execution follows a set cycle. List eight steps that are followed in execution of instruction. (4 Mks)
3. In context of bus inter connection, explain the following:
4. Organization
5. Performance (4 Mks)
6. Describe deadlock (4 Mks)
7. Explain techniques used to eliminate deadlocks. (4 Mks)