COMPUTER ORGANISATIN AND ARTITECTURE (BBIT 112) (CISY 111) 3rd trimester 2013

**KENYA METHODIST UNIVERSITY**

**END OF 3'***RD '***TRIMESTER 2013 (PT) EXAMINATION**

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| **FACULTY** |   | : | COMPUTING & INFORMATICS |
| **DEPARTMENT** | : | COMPUTER SCIENCE AND BUSINESS |   |   |   |   |   |   | INFORMATION |
| **UNIT CODE** |   | : | BBIT 112/CISY 111 |
| **UNIT TITLE** | : | COMPUTER ORGANISATION AND ARCHITECTURE |
| **TIME** |   |   | : | 2 HOURS |

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***Instructions:***

**SECTION A: Compulsory**

**Question One**

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| * Describe the following structures components of compute systems. State their functions and how they are organized.
 |   |   |   | (12mks) |

* C.P.U
* I/O Devices
* Memory
* Interconnection structure.

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| * Analyse the basic instruction cycle with provision of interrupts. Describe the steps of fetch-execute cycle and interrupt cycle.
 |   |   | (8mks) |
| * What are the limitation of Bus performance. State two.
 |   | (4mks) |
| * Describe the following in the context of bus.
 |   |   |   | (6mks) |

* Bus arbitration
* Timing

**SECTION B: Answer any two questions from this section**

**Question Two**

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| * Provide a reason why peripherals cannot be connected directly to system bus.
 |   |   |   |   |   |   |   |   |   | (3mks) |
| * Describe the following I/O functionality.
 |   |   |   | (6mks) |

* Control al timing
* CPU communication
* Data buffering

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| * Describe the concept of direct memory access as a solution to input/output challenges.
 |   |   |   |   |   |   |   |   | (5mks) |
| * Explain the three categories of I/O devices.
 |   |   |   | (6mks) |

**Question Three**

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| * Explain the role of the following memories.
 |   |   |   | (6mks) |

* Main memory
* Cache memory
* Virtual memory
* Explain the following memory access method and give examples. (8mks)
* Sequential
* Direct
* Random
* Associative

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| * The information stored in n level memory hierarchy, M1 to Mn, should satisfy the three important properties inclusion, coherence and locality. Explain the three properties.
 |   |   |   |   |   | (6mks) |

**Question Four**

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| * Describe the structure of hard disk in terms of cylinders, tracks, sectors and R/W heads.
 |   |   |   |   |   |   |   | (6mks) |
| * Describe the functions of the following CPU components.
 |   | (8mks) |

* Arithmetic and logic unit
* Control unit
* Register
* Internal bus

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| * Using FLYnn taxonomy describe the three main classes of parallel process.
 |   |   |   |   |   |   |   |   |   |   |   | (6mks) |

[Categories](http://online.kemu.ac.ke/kemuwiki/index.php?title=Special:Categories): [COMPUTER ORGANIZATION AND ARCHITECTURE](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:COMPUTER_ORGANIZATION_AND_ARCHITECTURE&action=edit&redlink=1) | [(BBIT 112)](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:(BBIT_112)&action=edit&redlink=1) | [(CISY 111)](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:(CISY_111)&action=edit&redlink=1) | [3rd trimester 2013](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:3rd_trimester_2013&action=edit&redlink=1)