STRUCTURED PROGRAMMING(BBIT 222)( CISY 111)2ND TRIMESTER 2016

**KENYA METHODIST UNIVERSITY**

**END OF 3'***RD '***TRIMESTER 2016 (FT) EXAMINATION**

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| **SCHOOL** |   | : | SCIENCE AND TECHNOLOGY |
| **DEPARTMENT** | : | COMPUTING AND INFORMATION SCIENCE |  |
| **UNIT CODE** | : | CISY 111/BBIT 222 |  |
| **UNIT TITLE** | : | STRUCTURED PROGRAMMING |  |
| **TIME** |   |   | : | 2 HOURS |  |

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|   |

**INSTRUCTIONS**

*Answer Question ONE and any other TWO questions*

**Question One (30 Marks)**

Briefly describe the following concepts as used with data structures and algorithms

* Function call
* Call by reference
* Recursion
* Pointer

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| * Data type
 |   |   |   |   |   |   |   | [10 marks] |

* Distinguish between
* Simple data type and compound data type
* Structure and Union

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| * Text file and binary file
 |   |   |   |   |   |   | [6 marks] |
| * Write a C++ program that uses an array to store ten numbers and display the content of the array
 |   |   |   |   |   |   |   |   | [6 marks] |
| * Describe the three parts of a function header
 |   |   |   |   | [6 marks] |
| * Give two methods used when using files for input and output
 |   | [2 marks] |

**Question Two (15 Marks)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| * Describe the scope of identifiers and how it relates to local and global variables
 |   |   |   |   |   |   |   |   |   |   |   | [6 mark] |
| * Write a C++ program that uses functions to determine area and circumference of a rectangle
 |   |   |   |   |   |   |   |   |   | [9 marks] |

**Question Three (15 Marks)**

* Using an example describe each of the following:
* Declare a pointer to an integer value
* Use the pointe to allocate memry
* Use the declared pointer for input

|  |  |  |  |
| --- | --- | --- | --- |
| * Deallocate the memory allocated using the pointer
 |   |   | [4 marks] |
| * Give the three conditions necessary for a problem to be solvable by recursion.
 |   |   |   |   |   |   |   |   |   |   |   | [3 marks] |
| * Describe four flags used when using text files for input/output
 |   | [8 marks] |

**Question Four (15 Marks)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| * Write a C++ file that stores the details of a student in a structure the sends it to a file
 |   |   |   |   |   |   |   |   |   | [10 marks] |
| * Write a function that computes the area of a circle, taking a pointer as argument
 |   |   |   |   |   |   |   |   | [5 marks] |

[Categories](http://online.kemu.ac.ke/kemuwiki/index.php?title=Special:Categories): [STRUCTURED PROGRAMMING](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:STRUCTURED_PROGRAMMING&action=edit&redlink=1) | [(BBIT 222)](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:(BBIT_222)&action=edit&redlink=1) | [( CISY 111)](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:(_CISY_111)&action=edit&redlink=1) | [3ND TRIMESTER 2016](http://online.kemu.ac.ke/kemuwiki/index.php?title=Category:3ND_TRIMESTER_2016&action=edit&redlink=1)