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

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

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

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| * 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)**

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| * 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

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| * 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)**

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| * 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] |

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