Structural programming (BBIT 222) (CISY 111) 1ST TRIMESTER 2015

**KENYA METHODIST UNIVERSITY**

**END OF 1'***st '***TRIMESTER 2015 (FT) EXAMINATION**

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| **FACULTY** |   | : | COMPUTING & INFORMATICS |
| **DEPARTMENT** | : | COMPUTER SCIENCE |
| **UNIT CODE** |   | : | BBIT 222/CISY 111 |
| **UNIT TITLE** | : | STRUCTURED PROGRAMING |
| **TIME** |   |   | : | 2 HOURS |

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**INSTRUCTIONS**

* *Answer question One and any other Two questions.*

**Question One (30 marks)**

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| * Explain the following C++ features
 | (6 marks) |

* Operator overloading
* Malloc ( )
* Constructor

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| * Briefly describe three access specifiers within a class
 | (6 marks) |
| * What is the importance of function prototype?
 | (3 marks) |
| * Outline the function of any three inbuilt strong functions in C++. Give its syntax
 | (6 marks) |
| * Using a recursive function write a C++ program to display the numbers from 10 to 20
 | (6 marks) |
| * What are the three ways to access sequential files?
 | (3 marks) |

**Question Two**

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| * Give the function of the following as used in C++
 | (6 marks) |

* fstream
* \*ptr
* ios::app
* Write a function named "location-of-largest" that takes as its arguments the following
* An array of integer values
* An integer that tells how many integer values are in the array.

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| The function should return as its value the subscript of the cell containing the largest of the value is the array. | (9 marks) |

**Question Three**

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| * Give the syntax of the following.
 | (7 marks) |

* Declare a pointer variable that points to a character variable
* A structure with any three different primitive data types
* A class
* Write a function named "digit-name" that takes an integer argument in the range 1 to 9, inclusive, and prints the English name of the integer on the computer screen. No newline character should be sent to the screen following the digit name. The function should not return a value. The cursor should remain on the same line as the name that has been printed if the argument is not is the required range, and then the function should print "digit error" without quotation marks but followed by the newline character. Thus for example

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| The statement digit-name (7); should print seven on the screen; the statement digit-name (0); should print digit error on the screen and place the cursor at the beginning of the next line. | (9 marks) |

**Question Four (15 marks)**

* Write a C++ class T which contains a const integer field n.T should also have constructor (s) which initializes n to an integer argument passed as a parameter or to zero if no argument is given; T should also have a destructor. The constructor (s) and destructor should print the value of the n.

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| * Briefly explain pointer arithmetic in C++. Give an example code snippet involving pointers in which it would be appropriate to use pointer arithmetic and explain why
 | (6 marks) |
| * Explain how in some respects pointers are equivalent to arrays and give one respect in which they differ.
 | (4 marks) |

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