STRUCTURED PROGRAMMING (BBIT 222) (CISY 111) 3rd trimester 2014

**KENYA METHODIST UNIVERSITY**

**END OF 3'***rd '***TRIMESTER 2014 (PT) EXAMINATION**

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

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**INSTRUCTIONS**

*Answer question one and any other two questions*

**Question One**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| * Define structured programming. | | | | | | | |  |  |  |  |  | (2 Marks) |
| * Explain the following concepts with regard to structural programming; |  |  |  |  |  |  |  |  |  |  |  |  | (6 marks) |

* Structured approach
* Top dow approach
* Modular approach

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| * State five advantages of structured programming. | | | | |  |  | (5 Marks) |
| * Explain the term struct. |  |  |  |  |  |  | (2 Marks) |
| * How are structs different from arrays? |  |  |  |  | | | (2 marks) |
| * State three flow chart symbols. |  |  |  |  | |  | (3 Marks) |
| * Outline five advantages of algorithms. |  |  |  |  | | | (5 Marks) |
| * List 5 features of object oriented programming. | | | | |  |  | (5 marks) |

**Question Two**

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| * Explain the difference between pass by value and pass by reference. |  |  |  |  |  |  |  |  |  |  |  |  | (6 marks) |
| * Using function prototypes write a C++ program to compute area and circumference of a circle. | | | | | | |  |  |  |  |  |  | (12 marks) |

**Question Three**

* Describe using examples of codes how to do the following;

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| * Declare an array of a struct. |  |  |  |  | | (2 Marks) |
| * Initialize an array of instances of a struct |  |  | (2 Marks) | | | |
| * Pass a struct’s instance as a parameter. |  |  | (6 Marks) | | | |
| * Starting with problem definition and analysis, draw a flowchart and write a C++ program to compute the sum and average scores for 3 tests done by 6 students and outputs results. |  |  |  |  |  | (10 marks) |

**Question four**

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| * The details stored for a person include the person’s name, department and salary. The operations performed on any person include registering a new person and outputting the person’s details. Implement this using a struct. Use three instances of the struct name a, b and c. Define two member functions namely void out ( ) to output details. | | |  |  | (10 marks) |
| * Explain five advantages of functions. |  |  |  |  | (10 marks) |

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