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**

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

* Structured approach
* Top dow approach
* Modular approach

|  |  |  |  |
| --- | --- | --- | --- |
| * 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**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| * 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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