STRUCTURED PROGRAMMING (BBIT 222) (CISY 111) 3rd trimester 2015

**KENYA METHODIST UNIVERSITY**

**END OF 3'***RD '***TRIMESTER 2015 (PT) EXAMINATION**

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| **FACULTY** |  | : | COMPUTING & INFORMATICS | |
| **DEPARTMENT** | | | : | COMPUTER SCIENCE |
| **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 the following as used in structural programming; |  | (5 Marks) |

* Structured programming
* Structure
* File
* Constructor
* Array

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| * What are the three ways to access sequential files? |  |  | (3 Marks) |
| * Explain three built in functions in C++. Give their syntax. | | | (5 marks) |
| * Give the function of the following as used in C++ |  |  | (4 Marks) |
| * f stream | | |  |

* \*ptr
* Declare a structure called student with the following members;

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| --- | --- | --- | --- | --- |
| stdName, Date of Birth, Age and Weight all with different types | | | | (5 Marks) |
| * Write a C++ program that stores n integer values entered by a user computer and outputs their cumulative sum. |  |  |  | (7 marks) |

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| * Explain the following terms as used in C++ programming |  | (4 Marks) |

* Function prototype

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| * Operator overloading |  |

* Write a C++ program that defines the prototypes for the following functions;
* Add ( ) to add 2 integers
* Subtract ( ) to subtract 2 integers

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| Your program should call the two functions in the main function. (6 marks) |  |

**Question Two**

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| * Write a C++ program to output the cumulative sum of the even numbers 0 to 10 inclusive using; |  |  |  |  |  |  |  | (9 Marks) |

* For --- loop
* While --- loop
* Do ---- while loop

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| * What is a recursive function? |  |  |  |  |  | (2 Marks) |
| * Write a recursive function to compute the factorial of 5 | | | | |  | (5 Marks) |

**Question Three**

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| * Give five advantages of structured programming. |  |  | (5 Marks) |
| * Explain the role of the following in C++ programming | |  | (5 Marks) |

* fstream
* malloc
* \* p
* Free
* Int x

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| * Write the syntax for the following in C++; |  |  |  | (5 Marks) |

* A pointer variable that points to the address of an integer value
* An array of 10 integer values
* A structure of members of different types

**Question Four**

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| * What is dynamic memory allocation? |  |  |  |  | (3 Marks) |
| * Describe three decision or selection structures in programming. | | | | | (3 Marks) |
| * Write a C++ program that asks a user to enter a student score in an exam then determines the grade as follows; |  |  |  |  | (9 marks) |

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| Score | Grade |
| 0-39 | F |
| 40 -49 | D |
| 50-59 | C |
| 60-69 | B |
| 70-100 | A |

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