Mount Kenya University

*UNIVERSITY EXAMINATION 2017/2018*

*SCHOOL OF COMPUTING AND INFORMATICS*

*DEPARTMENT OF INFORMATION TECHNOLOGY*

*BIT/BSS/BAS/BBIT*

*REGULAR*

*UNIT CODE:BIT 2201. UNIT TITLE: COMPUTER PROGRAMMING METHODOLOGY*

*2:00PM, MAIN EXAM. TIME :2 HOURS*

*INSTRUCTIONS:Section A is Compulsory answer all question s in this section.In Section B Answer any two questions.*

*QUESTION ONE*

1. *Define the following terms: (4 Marks)*
2. *Program*
3. *Programmer*
4. *Module*
5. *Structure*

1. *Explain the following terms as used in program execution. (6 Marks)*
2. *Compiler*
3. *Interpreter*
4. *Linker*

*c)Briefly explain the three types of programming errors. (6 Marks)*

*d)What is a constant? Write a program to calculate the area of a circle using the #define preprocessor command given that the radius is supplied during runtime. (4 Marks)*

*QUESTION TWO*

*a)Describe the control structures used in structured programming. (6 Marks)*

*b)Write a program that uses a loop to generate and display numbers 0 to 9. (4 Marks)*

*c)Explain any FIVE features of C as a programming language that make it a preferable choice over most languages for system development. (5 Marks)*

*d)Briefly describe the guidelines to good programming in c. (5 Marks)*

*QUESTION THREE*

1. *What is an array? Write a program that obtains scored marks of five students in a subject then calculates the sum and average. Use arrays in the program. (4 Marks)*
2. *A program is required to accept the length and width of a square and displays its area.*
3. *Write a pseudo code to represent the solution to the program described above. (4 Marks)*
4. *Draw a flowchart to represent the solution to the program described above. (6 Marks)*
5. *Write a program that accepts the length and width of the square and displays its area. (6 Marks)*

*QUESTION FOUR*

*a)Define an Algorithm. (2 Marks)*

*b)State and explain two characteristics of an algorithm. (6 Marks)*

*c)Explain the stages that a compiler goes through in the process of compilation. (8 Marks)*

*d)Briefly describe any FOUR factors that should be considered when choosing a programming language. (4 Marks)*

*QUESTION FIVE*

*a)*

*I)What is a Function. (2 Marks)*

*ii)Distinguish between a Global and a Local variable. Which one has a higher priority than the other? Explain using an example program. (4 Marks)*

*b)Explain the TWO problem solving strategies used in programming. (4 Marks)*

*c)With an aid of an example, explain the major parts of a program written in c. (10 Marks)*