**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**P.O. Box 972-60200 – Meru-Kenya.**

**Tel: 020-2069349, 061-2309217. 064-30320 Cell phone: +254 712524293, +254 789151411**

**Fax: 064-30321**

**Website:** [**www.must.ac.ke**](http://www.must.ac.ke) **Email:** **info@must.ac.ke**

**University Examinations 2014/2015**

FIRST YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY, BACHELOR OF SCIENCE IN COMPUTER SCIENCE, BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY AND BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND FORENSIC

**CIT 3102/ICS 2102: FUNDAMENTALS OF COMPUTER PROGRAMMING**

 **DATE: OCTOBER 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Explain two criteria a programmer should use to evaluate a programming language. (4 Marks)
2. Outline the format of a C program. (4 Marks)
3. Use an example to differentiate between a compound statement and simple statement. (2 Marks)
4. Compare the two methods used to declare a constant in C programming giving example in each case. (2 Marks)
5. Write a C program to input two numbers then add the two numbers and display.(4 Marks)
6. Differentiate between break and continue statements used in controlling loops. (2 Marks)
7. Explain the importance of comments and describe the two types of comments used in C programming. (3 Marks)
8. Briefly describe the purpose of the following as used in programming:
9. Complier.
10. Assembly. (4 Marks)
11. Write a C program to enter 6 numbers into an array then display the biggest and the smallest umber. (5 Marks)

**QUESTION TWO (20 MARKS)**

1. Describe the following as used in programming:
2. Variables.
3. Constants. (4 Marks)
4. A retail shop wish to acquire a program to enter product name, price and quantity then calculate total price. Write a C program that calculates the total price. (6 Marks)
5. Write the C program to display numbers as shown below: (5 Marks)

12345

1234

123

12

1

1. Write a program to input a word then display the number of characters entered. (5 Marks)

**QUESTION THREE (20 MARKS)**

1. Compare switch and if statements explaining where each can be applied appropriately. (4 Marks)
2. Write a C program that reads the radius of a sphere and calculate the volume. Where volume = (4 Marks)
3. Design a C program to enter input employee name, hours worked and rate per hour via keyboard then calculate the basic pay=hours worked\*rate per hour. (6 Marks)
4. Discuss challenges of developing a system using C programming language as compared to other programming languages. (6 Marks)

**QUESTION FOUR (20 MARKS)**

1. Use an example to illustrate the structure of a C function. (4 Marks)
2. Write a program to enter 8 numbers then sort the numbers using linear sort technique. (6 Marks)
3. Write a program to create a data structure to store student name, mathematics, English and Kiswahili marks then calculate total marks and average marks. (6 Marks)
4. Write a program that converts temperature from degrees Celsius to Farenheight. Where Farenheight =32+9/5\*Celsius. The program should be presented on the screen in the following format: 15 degrees Celsius is equal to 93.2 degrees Celsius. (4 Marks)

**QUESTION FIVE (20 MARKS)**

1. Before the introduction of relational database, information system data were stored in text files for future retrieval and data organization. Currently information systems make use of database management system to organize and store data. Explain any two challenges that led to shifting from storage of data in text files to relational database management system. (4 Marks)
2. Differentiate between one dimension array and two dimension array. (4 Marks)
3. Explain the importance of declaring variables. (6 Marks)
4. Design a program to display 5 by 5 multiplication table. (6 Marks)