

**MERU UNIVERSITY OF SCIENCE AND TECHNOLOGY**

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**University Examinations 2014/2015**

FIRST YEAR, SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN FOOD SCIENCE AND NUTRITION, FOOD SCIENCE AND TECHNOLOGY, FOOD SCIENCE AND MANAGEMENT, HUMAN NUTRITION DIETETICS, HORTICULTURE

AND

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY, INFORMATION SCIENCE, BACHELOR OF TECHNOLOGY IN ELECRICAL ENGINEERING, CIVIL ENGINEERING, MECHANICAL ENGINEERING

**ICS 2107/CCA 3111/ICS 2110/CIB 3110: INTRODUCTION TO COMPUTER TECHNOLOGY/INTRODUCTION TO INFORMATION TECHNOLOGY/INFORMATION TECHNOLOGY I /INTRODUCTION TO COMPUTER SYSTEMS**

**DATE: DECEMBER 2014 TIME: 2 HOURS**

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

**QUESTION ONE (30 MARKS) – COMPULSORY**

1. A computer vendor advertised a computer with the following specifications: Intel Pentium duo core, **3Ghz** processor, **3.0 GB RAM. 320 GB HDD. Windows 8**, and **15.6” monitor.** Explain the given specifications (5 marks)
2. How many 1.44 MB storage device would be used to store data that require a storage space of 4.7 GB? (3 marks)
3. Explain two benefits which an organization may enjoy after automating their production system (4 marks)
4. Contrast a file management system from a database management system (3 marks)
5. The internal structure of a disc is shown below. Name the labelled parts and give a brief description of each part
6. Find the value of the unknown in each of the following
7. 11011002=W16 (2 marks)
8. AE0DF16=X10 (2 marks)
9. 10110115=Y8 (2 marks)
10. Give a brief description of the following codes
11. ASCII (2 marks)
12. Unicode (2 marks)
13. State and briefly explain any five primary functions of the operating system

(5 marks)

**QUESTION TWO (20 MARKS)**

1. Computers use the binary number system instead of the decimal number system; explain four reasons that justify this decision (6 marks)
2. Convert the 32- bit single-precision IEEE Standard 754 number shown below into its binary equivalent. 11010110101101101011000000000000 (5 marks)
3. Distinguish between the second and the third computer generations (5 marks)
4. Give two advantages and disadvantages of the following types of printers if your organization decides to purchase them
5. Laser printer (2 marks)
6. Dot matrix printer (2 marks)

**QUESTION THREE (20 MARKS)**

1. Give a brief description of the following
2. Sequential files (2 marks)
3. Random files (2 marks)
4. Indexed sequential files (2 marks)
5. A student wants to upgrade her operating system. State and explain five factors she should consider (5 marks)
6. Briefly describe a human being as an information processor (4 marks)
7. Describe the Mini computers (3 marks)
8. State four ways by which ICTs have improved communication (2 marks)

**QUESTION FOUR (20 MARKS)**

1. Identify and explain any four salient features of modern computers (4 marks)
2. Give an elaborate distinction between digital computers and analog computers (4 marks)
3. Briefly analyze the trend in the computer’s technological revolution (4 marks)
4. Define the following terms as used in computers:
5. Bit (1 mark)
6. Word length (1 mark)
7. (i) Define the term operating system (1 mark)

(ii)Distinguish between graphical user interface and command line interface

(5 marks)

**QUESTION FIVE (20 MARKS)**

1. Express the following values in octal number system, hence arrange them in ascending order: A0F16, 2610, 4508, 4215, and 11100101102 (8 marks)
2. Differentiate between a workbook and a worksheet as used in spreadsheets

(2 marks)

1. Distinguish between RAM and ROM and give two examples of each type (4 marks)
2. Give three functions of each of the following components
3. Control Unit (2 marks)
4. Arithmetic Logic unit (2 marks)
5. Identify four advantages of using a word processor package over a type writer

(2 marks)