

**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 2015/2016**

FIRST YEAR, FIRST SEMESTER EXAMINATION FOR BACHELOR OF SCIENCE IN COMPUTER TECHNOLOGY, INFORMATION SCIENCE , PHYSICS/CHEMISTRY,FOOD SCIENCE MANAGEMENT, HUMAN NUTRITION AND DIETETICS, FOOD SCIENCE ,AGRICULTURE, HORTICULTURE, ANIMAL HEALTH AND AGRICULTURAL EXTENSION AND EDUCATION ,BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY , BACHELOR OF SCIENCE IN COMPUTER SCIENCE AND FORENSICS, BACHELOR OF SCIENCE STATISTICS,BACHELOR OF SCIENCE IN MATHEMATICS AND COMPUTER SCIENCE,BACHELOR OF BUSINESS ADMINISTRATION, BACHELOR OF COMMERCE AND BACHELOR OF BUSINESS INFORMATION TECHNOLOGY

**CIT 3100: INTRODUCTION TO COMPUTER TECHNOLOGY**

**DATE: NOVEMBER, 2015 TIME:** $2$ **HOURS**

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

**QUESTION ONE – (30 MARKS)**

1. At the Hockey World Cup, officials and photographers will have wireless-enabled notebook computers. These will be used to update results, statistics and photographs for the web site. The digital video cameras are connected to computers and may transmit their video images to the temporary server by a wireless or cable network. Explain **three** advantages and **three** disadvantages of using a wireless network at the World cup.

 (6 Marks)

1. Describe four factors to consider when purchasing a printer. (4 Marks)
2. Describe three functions of an operating system. (6 Marks)
3. Identify four types of system software with suitable examples. (8 Marks)
4. Describe three factors considered when buying a computer system. (6 Marks)

**QUESTION TWO (20 MARKS)**

1. A student is using a computer with a 16x DVD, 17 inch flat screen monitor, 2GB hard disk, 2 MB L1 cache and 256 RAM. She has 500 MB of files stored on her computer already. In addition the operating system of her computer requires 60MB RAM and a graphics package requiring 110 MB of RAM.
2. On which piece of hardware will the applications be stored when she installs them?

 (1 Mark)

1. Explain whether or not she could have both new applications open on her machine at the same time. (2 Marks)
2. In your opinion, what ethical issues do you think may arise from use of computers?

 (4 Marks)

1. Perform the following computations; (9 Marks)
2. Find the hexadecimal equivalent to the decimal number 41.755$6\_{10}$
3. Subtract 11102 form 1011012
4. Divide 011011112 by 01112
5. System security is the protection afforded to an automated information system in order to attain the applicable objectives of the system. Outline any four objectives of system security. (4 Marks)

**QUESTION THREE (20 MARKS)**

1. Highlight three factors to consider when choosing an application package. (6 Marks)
2. The automated reservation section is being designed for the proposed new system. This will allow guests to access the hotel’s website and make a reservation from anywhere in the world. Guests will then get immediate confirmation of their reservation. The existing file server will host all applications including the website which means it will have to be upgraded.

The system designer, Basil, has chosen to keep the current 32-bit operating system and is now considering which of the following hardware components should be upgraded.

1. Main memory from 512 MB to 1024 MB
2. Processor form 32-bit to 64-bit
3. Video card from standard to 3-D

Which choice A., B. or C.) will have the most impact on the serve’s overall performance? Justify your answer by comparing the three choices. (4 Marks)

1. Describe two factors that affect the quality of a monitor. (4 Marks)
2. Employees can resist the introduction of any new technology to their organization. Analyze six ways you can use to minimize this resistance. (6 Marks)

**QUESTION FOUR (20 MARKS)**

1. A travel agency intends sending a one page newsletter every 2 months to its international customers. To save costs, the agency is considering sending the newsletter via email rather than printing and mailing it. Apart from the cost, describe four possible factors that will need investigation before this plan is put into practice. (4 Marks)
2. A user can acquire desired software by buying pre-written software or developing customized software. Each of these ways of acquiring software has its own advantages and limitations. Outline three advantages and three disadvantages of developing pre-packaged software. (6 Marks)
3. Differentiate between the RAM and Cache Memory. (4 Marks)
4. With the aid of a diagram describe any two types of network topologies. State one advantage and one disadvantage of each. (6 Marks)

**QUESTION FIVE (20 MARKS)**

1. Part of Maree’s task is to provide recommendations for a suitable back-up system for the new web server. Maree has estimated that allowance should be made to back up at lease 2 GB of data. She is investigating the following options.

**Option 1.** On-line back up through an external company

This system schedules a daily back up of all relevant data to a data storage facility. A back up of the back up is then sent electronically to another site at least five kilometers away. The cost for data storage is $10 per month for every 100 MB stored. The back-up software is installed free.

**Option 2.**Tape Back up

An external tape unit with USB connection with 2 Mbps transfer rate. Backups can be scheduled daily. Tapes can hold 20 GB of data and cost $100 each and the tape drive costs $450.Discuss six factors that Maree needs to consider before making her final recommendation. (6 Marks)

1. The CPU contains three components. Explain each one of them. ( 6 Marks)
2. Identify four types of keys on a keyboard and outline the functions and examples of each.

(4 Marks)

1. Describe any four classification of computer application software with suitable examples.

(4Marks)