TECHNICAL UNIVERISTY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATION FOR DEGREE IN:
BACHELOR OF TECHNOLOGY IN INFORMATION TECHNOLOGY
BACHELOR OF SCIENCE IN DEVELOPMENT STUDIES
BACHELOR OF JOURNALISM & MASS COMMUNICAITON

EIT 4101: FUNDAMENTALS OF COMPUTING

END OF SEMESTER EXAMINATION
SERIES: DECEMBER 2014
TIME: 2 HOURS

<u>**Instructions to Candidates:**</u>
You should have the following for this examination
- *Answer Booklet*

This paper consists of **FIVE** questions. Attempt question **ONE (Compulsory)** and any other **TWO** questions
Maximum marks for each part of a question are as shown
This paper consists of **THREE** printed pages

Question One (Compulsory)

a) An information system is to be installed in a bus station. There will be a number of terminals for use by passengers who will be able to make enquiries about times of buses and the stops that they will make on the journey. The terminals will be in the open air. The terminals will be **networked** with a server in the main office. State the peripheral hardware components for this networking system, giving reasons for your answers.   **(8 marks)**

b) A shopkeeper uses a stand-alone computer for producing:
  (i) Order forms for sending to suppliers
  (ii) Records of sales and purchases as evidence for the taxation authorities
  (iii)   Leaflets advertising special offers

The computer has a hard drive, a CD-RW drive and a DVD drive. State a different use, by the shopkeeper, for each of these three storage media. In each case say why it is appropriate for that use.   **(6 marks)**

c) An examination centre holds data but the candidates at that centre. The data held is:
  (i) 4 digit candidate number
  (ii) Candidate name

(iii) Gender
(iv) Date of birth
(v) Number of subjects entered

There are 200 candidates entered by the centre, the expected size of the file is 7.5 Kbytes. State a suitable medium for storing a back-up copy of the candidate file, giving a reason for your answer.
(6 marks)

d) Amina is a Media Personnel; she desires to buy a computer to use for her day to day activities. Explain how you would advice Amina on the features she should look for. **(6 marks)**

e) A firm offers a service to potential customers whereby the firm's representative calls at the customer's house and produces and image of what the proposed building improvements will look like. Explain how this service is carried out. Include a reference to the hardware and software required. **(4 marks)**

Question Two

a) Differentiate between a bit and a byte **(2 marks)**

b) Give TWO reasons why the binary number system is utilized for modern electronic digital computers **(2 marks)**

c) Most operating systems include several programs that can be used to manage, protect data and improve the performance of the computer. Briefly discuss any FOUR management/maintenance programs (processes) that windows OS provide to keep the computer in top working condition.
(8 marks)

d) State the importance of the following tools:
    (i) Control panel
    (ii) Windows desktop
    (iii) Disk manager
    (iv) Windows explorer **(8 marks)**

Question Three

a) Name the major technologies that distinguish the computer generations (i.e. 1st to 5th).
(5 marks)
b) A supermarket has a number of point of sale (POS) terminals. State TWO input devices and one output device that would be found at teach POS terminal, describing what they are used for.
(5 marks)
c) Briefly explain the following categories of programs with an example of each. **(10 marks)**
    (i) Word processor
    (ii) Spreadsheet
    (iii) Database system
    (iv) Presentation package
    (v) CAD package

Question Four

a) A multinational organization has offered to donate computers to your organization. The board of Governors has requested you to advice on the operating system to be used by providing answers to the following questions:
    (i) What is an operating system? **(2 marks)**
    (ii) Briefly explain any THREE functions of an operating systems **(6 marks)**

b) A member of the board has heard of windows file systems:
    (i) Define windows file system **(2 marks)**
    (ii) Bring out clearly the two types of file systems supported by windows and recommend with supporting facts the best the organization can adopt **(4 marks)**

c) Perform the following conversion: Using TWO compliments subtract 5 from 3 and express your answer in decimal form **(3 marks)**

d) List SIX input devices you know. **(3 marks)**

Question Five

a) Using a well-labeled diagram, illustrate the functional components of a computer system **(8 marks)**

b) A company has a workforce of around 2000. Some work in the office using the computer system for administrative tasks, while others use the computer system on the production line for giving details of orders that need to be manufactured. Select appropriate hardware and software for these two application areas, giving reasons for your choices. **(12 marks)**