

SCHOOL OF SCIENCE, ENGINEERING AND HEALTH
DEPARTMENT OF COMPUTER SCIENCE
FINAL EXAMINATION DECEMBER 2014 SEMESTER
SCU 100: BASIC COMPUTER FUNDAMENTALS

DATE: AUGUST 2014

TIME:

INSTRUCTIONS:

Answer question ONE and ANY other two

Question 1 **(40 marks)**

Machakos University College is in the process of digitizing its way of teaching/learning. This means that all classes will be equipped with *micro-computers* through which students will be able to access learning materials. A *network* will be set up linking all computers in the institution, additionally all computers will be connected to the *internet*.

- a) Discuss any **three** ways computers can be used to enhance learning at the university (6 marks)
- b) Since the classes will be equipped with micro-computers discuss the different types of microcomputers stating where each can best be used at the university (3 marks)
- c) What **four** major factors would you advice the institution to consider when purchasing these computers (4 marks)
- d) Define application software, state and mention the role of any **two** that you would recommend to the University to install in their systems (5 marks)
- e) Each of this computer has Windows XP installed as the operating system, what is an operating system? Discuss its roles in computers (5 marks)
- f) With the computers connected to the internet, the University adopts use of emails as the primary way of communication to students, discuss **four** major benefits of this trend as compared to having notices posted on notice boards (4 marks)
- g) Discuss the negative ethical impacts students may accrue from accessing the internet and recommend to the university management ways to control these impacts (6 marks)
- h) Explain three ways you would tell if these computers are infected with viruses. (3 marks)
- i) Computers system need to be secured, describe to the management **four** different ways of securing these computer systems and that data inside. (4 marks)

Question 2 **(30 marks)**

- a) Describe first generation computers (3 marks)
- b) What is telecommuting ?discuss any four benefits to professionals (5 marks)
- c) Explain the role of a search engine with respect to the Internet? Give any **two** examples of search engines used on the Internet. (4 Marks)
- d) Briefly explain the benefits of using the word processors over the manual typewriters. (6 Marks)
- e) Differentiate between a Local Area Network (LAN) and a Wide Area Network (WAN) (4 Marks)
- f) Discuss the design, advantages and limitations of Star topology (8 marks)

Question 3**(30 marks)**

- a) Differentiate data from information (2 marks)
- b) Describe any **two** output and **two** input devices, explaining how they are used in computer systems (8 Marks)
- c) Discuss the **four** major factors you would consider when purchasing a printer (8 marks)
- d) Discuss the classification of computers based on data handled (6 marks)
- e) Describe the use of the following application programs with an example for each of them. (6 marks)
 - (i) Spreadsheet
 - (ii) Database management system
 - (iii) Word processor

Question 4**(30 marks)**

- a) Differentiate volatile from non-volatile memory and give an example for each category (4 marks)
- b) Why are non-impact printers preferred over impact printers (6 marks)
- c) Explain the features of secondary storage devices (6 marks)
- d) Discuss any four possible career options for a computer science graduate (8 marks)
- e) How can computers be used in hospitals (6 marks)