



TECHNICAL UNIVERISTRY OF MOMBASA

Faculty of Engineering & Technology

DEPARTMENT OF COMPUTER SCIENCE & INFORMATION TECHNOLOGY

UNIVERSITY EXAMINATIONS FOR DEGREE IN:
BACHELOR OF SCIENCE IN CIVIL ENGINEERING (Y1 S2)

ICS 2174: INTRODUCTON TO COMPUTER SCIENCE

END OF SEMESTER EXAMINATION

SERIES: APRIL 2015

TIME: 2 HOURS

Instructions to Candidates:

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) A student desires to buy a laptop that he can use for his research work. Explain how you would advice on the system performance issues. **(6 marks)**
- b) A firm offers a service to potential customers whereby the firm's representative calls at the customer's house and produces an 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)**
- c) Explain the following concepts. **(6 marks)**
- (i) Registers
 - (ii) System bus
 - (iii) Buffer
- d) Spreadsheet application have a wide variety of functions which can be used. Write down the name of the spreadsheet function that you will use for each of the examples below. **(2 marks)**
- (i) Add up a series a number in a range **(2 marks)**
 - (ii) Determine how many cells in a range a value of 100 or more **(2marks)**
- e) (i) Differentiate between a database and a database management system **(4 marks)**
- (ii) Describe the general organization of a relational database **(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) Briefly discuss any FOUR systems management maintenance programs (process) 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 firewall
(iii) Disk for mating
(iv) Windows explorer (4 marks)
- e) Explain any FOUR functions of an operating system (4 marks)

Question Three

- a) Name the major technologies that distinguish generations (i.e. 1st – 5th) (5 marks)
- b) A supermarket has a number of point of sale (POS) terminals. State TWO inputs devices and ONE output device that would be found at each (POS) terminal, describing what they are used for (5 marks)
- c) Briefly explain the unique features of an electronic word processor (4 marks)
- d) Discuss the instruction execution cycle (6 marks)

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 proving answers to the following questions:
(i) What is an operating system? (2 marks)
(ii) Briefly explain any THREE functions of an operating system (6 marks)
- b) A member of the board has heart 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 that best the organization can adopt (4 marks)
- c) Perform the following conversations:
(i) 45 base 8 to decimal system (3 marks)
(ii) Using two compliments subtract 5 and from 3 and express your answer in decimal form (3 marks)

Question Five

- a) Using a well-labelled diagram, illustrate the functional components of a computer system.
- b) A company has a workforce of around 2000 some work in 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 peripheral hardware and softwares for these two application areas, giving reasons for your choices

Describe the following categories of control structures as used in C:

(i) Sequential

(ii) Selection

(iii) Looping or iteration

(10 marks)

c) Draw the corresponding flow charts for the selection and looping control structures **(8 marks)**

d) Outline the differences between a DO-WHILE and a WHILE LOOP structure **(2 marks)**