



SOUTH EASTERN KENYA UNIVERSITY
UNIVERSITY EXAMINATIONS 2016/2017

SECOND SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR
OF SCIENCE IN BACHELOR OF PROCUREMENT AND SUPPLY CHAIN
MANAGEMENT

SCI 112: INTRODUCTION TO COMPUTER SYSTEMS
(Machakos Campus)

DATE: 19TH APRIL, 2017

TIME: 1.30 -3.30 PM

ANSWER QUESTION 1 AND ANY OTHER TWO QUESTIONS

Question 1 (30marks)

- a) Explain the following terms as used in computer science:
- | | |
|-----------------------|----------|
| (i). Data | (1mark) |
| (ii). Program | (1mark) |
| (iii).Data processing | (2marks) |
| (iv). Information | (1mark) |
- b) Give four differences between fifth generation computers and the first generation computers. (3marks)
- c) List and explain three functional elements of a computer system (3 marks)
- d) Show the difference between the Control Unit of a processor and the Operating system in terms of functionality (3marks)
- e) A computer specification has the following details:
- Pentium III
 - 1.44 MB Floppy disk drive
 - 20 GB Hard disk
 - Full Multimedia
 - 17" SVGA monitor

Pre-installed Operating system

Pre-installed Office Suite

What is meant by (3 marks)

- (i). 1.44 MB floppy disk drive.
 - (ii). 20 GB
 - (iii). 17" SVGA
- f) Distinguish between Copying and Moving text. (2 marks)
- g) Explain five application areas where spreadsheet software can be used (5marks)
- h) Differentiate between Hacking and Cracking with reference to computer crimes(2marks)
- i) Convert 767_8 to hexadecimal (2marks)
- j) State TWO devices are used to connect your computer to the ISP (2marks)

Question 2(20marks)

- a) A computer must go through the process of booting/initialization before use.
- (i). Briefly explain the term "computer booting". (2 mark)
 - (ii). Explain what happens in the computer during the booting process. (2 marks)
 - (iii). Give and explain two types of booting. (2 marks)
 - (iv). What type of memory is used to store the boot up program (the first program to be executed on switching on a computer). (1 mark)
 - (v). State two ways of warm booting a computer. (2 marks)
- b) Using a well-labelled diagram, give a descriptive illustration of a computer system.(7marks)
- c) Name the type of scanner used:
- (i). To capture prices of goods at points of sale terminals in supermarkets and superstores (2marks)
 - (ii). To grade multiple choice examination (2marks)

Question 3 (20marks)

- a) Describe three functions performed by the CPU. (3 marks)
- b) Explain the functions performed by each of the following central processing unit elements.
- (i). Control Unit. (2 marks)
 - (ii). Registers. (1 mark)
 - (iii). The Main memory. (2 marks)

- (iv). The System clock. (1 mark)
- c) Outline three characteristics of Random Access memory (RAM). (3 marks)
- d) You have been asked by a small start-up firm to assist them in selecting a microcomputer for their use. Discuss five hardware and five software factors you would consider in order to select the most suitable computer system. (8marks)

Question 4 (20marks)

a) The following is a simple payroll:

| | A | B | C | D | E | F | G | H | I |
|---|-------|--------------|-------------|-----------|-----------|----------------|--------------------|-----------|---------|
| 1 | Name | Hours Worked | Hourly Rate | Basic Pay | Gross Pay | Tax Deductions | NSSF Contributions | Allowance | Net Pay |
| 2 | John | 8 | 200 | | | | | | |
| 3 | Peter | 12 | 450 | | | | | | |
| 4 | Sam | 22 | 300 | | | | | | |
| 5 | Njogu | 30 | 286 | | | | | | |
| 6 | Mary | 16 | 220 | | | | | | |
| 7 | Sally | 45 | 468 | | | | | | |
| 8 | Jane | 15 | 150 | | | | | | |
| 9 | Tina | 3 | 280 | | | | | | |

Write formulae using cell names for the following expressions. State where the formula is placed:

- (i) Basic pay = Hours worked x Hourly rate. (2marks)
- (ii) Allowances are allocated at 10% of the Basic pay. (2marks)
- (iii) Gross pay = Basic pay + Allowances. (2marks)
- (iv) Tax deduction is calculated at 20% of the Gross pay. (2marks)
- (v) Net pay = Gross pay – Tax deductions. (3marks)

- b) Your manager wishes to be connected to the Internet. He already has a powerful Personal Computer (PC), a Printer, and access to a Telephone line. However, he understands that he will need a Modem.

Required:

- (i). Explain why a modem is required to connect him to the Internet. (5 marks)
- (ii). Suggest any four application areas in which you would expect a supermarket retail manager to use the Internet. (4 marks)

Question 5 (20marks)

- a) Computer systems need maximum security to prevent an unauthorized access. State six precautions that you would expect an organization to take to prevent illegal access to its computer-based systems. (6marks)
- b) Briefly explain four important benefits of using Local Area Networks (LANs) at an institution such as a college (8marks)
- c) With the improvement in price and performance of computers and communication equipment, it will be possible for people in various business organizations to work from home. Such working using a PC as a remote terminal is often described as teleworking. State three advantages and three disadvantages of working from home. (6 marks)