



Machakos University College

(A Constituent College of Kenyatta University)

University Examinations 2014/2015

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR FIRST SEMESTER EXAMINATIONS FOR THE DEGREE OF BACHELOR OF SCIENCE IN COMPUTER SCIENCE

SCO100: FUNDAMENTALS OF COMPUTING

DATE: 09/12/2014

Time: 8:30-10:30 AM

INSTRUCTIONS

- This paper consists of **FIVE** questions
- Answer **question one** and other **two questions** in this paper

1.
 - (a)
 - (i) Outline **three** functions of an operating system. (3 marks)
 - (ii) Describe **two** data processing modes used in computer science. (4 marks)
 - (b)
 - (i) The following are components of a computer system:
Linker, trackball, RAM, bus, compiler, loader, joystick, network card
Classify each component as either computer software or computer hardware. (4 marks)
 - (ii) Mary, a computer science student acquired general purpose software for her laptop.
Explain **three** advantages of such software. (6 marks)
 - (c)
 - (i) Machakos University College has network all computers used in administration.
Outline **three** benefits the college would accrue from this action. (3 marks)
 - (ii) Explain the function of each of the following computer network components.
I. Router;
II. Bridge . (4 marks)
 - (d)
 - (i) Outline the contribution of each of the following individuals to the development of computing.
I. Charles Babbage;
II. Blaise Pascal. (2 marks)
 - (ii) Compare the characteristics of *third* and *fourth* generation computers. (4 marks)
2.
 - (a)
 - (i) List **three** uses of computers in a health facility. (3 marks)
 - (ii) Explain **two** ethical issues that might arise due to the use of computers in an organization. (4 marks)
 - (b)
 - (i) Name **two** computer keyboard keys that locks their function until the user changes the function. (2 marks)
 - (ii) Distinguish between *overwrite* and *insert* modes as used in word processing. (2 marks)

- (c) (i) Tom, a student at MUC created a document that he would like to protect against unauthorized access. Describe one facility he could use to achieve this objective. (2 marks)
- (ii) Outline **four** computer crimes associated with the use of internet. (4 marks)
- (d) State a type of port that would be most appropriate to connect each of the following computer components.
- (i) Network cable;
- (ii) Keyboard;
- (iii) Computer monitor. (3 marks)
3. (a) (i) State the characteristics of a *Personal Area Network*. (2 marks)
- (ii) Describe the topologies used in a *local area network*. (6 marks)
- (b) (i) Identify the most appropriate software that could be used compute and show a report on students fees balances in a College. Justify your answer. (2 marks)
- (ii) Explain each of the following components of a database.
- I. Query;
- II. Report. (4 marks)
- (c) (i) Explain the term *cloud computing* as used in computer science. (2 marks)
- (ii) Outline **four** benefits of cloud computing in an organization. (4 marks)
4. (a) Outline circumstances that would make a user to store data in a flash disk rather than in a compact disk. (3 marks)
- (b) Distinguish between *animation* and *transition* as used in presentation programs. (4 marks)
- (c) Explain **five** negative impacts of computers in the society. (10 marks)
- (d) A departmental computer has the following specifications:
- (i) 3.2 GB RAM
- (ii) 500 GB HDD
- (iii) 15" TFT
- Explain each of the specifications. (3 marks)
5. (a) Outline **five** careers available to computer science graduates. (5 marks)
- (b) Convert each of the following decimal numbers to the indicated bases:
- (i) 58 to base 2;
- (ii) 234 to base 8;
- (iii) 568 to base 16. (6 marks)
- (c) (i) Explain the *mail merge* facility as used in word processing. (2 marks)
- (ii) Outline the function of each of the following features as used in e-mail programs.
- I. Attachment;
- II. Signature;
- III. BCC. (3 marks)
- (d) Distinguish between *Arithmetic Logic Unit* and *Control Unit* as used in computer science. (4 marks)