



MACHAKOS UNIVERSITY

University Examinations for 2019/2020 Academic Year

SCHOOL OF ENGINEERING AND TECHNOLOGY

DEPARTMENT OF COMPUTING AND INFORMATION TECHNOLOGY

FIRST YEAR SECOND SEMESTER EXAMINATION FOR

DIPLOMA IN EDUCATION

UCU 0101: INTRODUCTION TO ICT

DATE: 16/11/2020

TIME: 11:00 – 1:00 PM

INSTRUCTIONS

Answer question ONE and any other TWO questions.

QUESTION ONE (30 MARKS)

- a) Explain the 4 functionalities of computers (5 marks)
- b) Explain Five benefits that an organization may gain by integrating a variety of computer application software in its functional operations and transactions (5 marks)
- c) Describe the function of any five types of computer peripheral devices (5 marks)
- d) Explain the functions of the operating system. (5 marks)
- e) In relation to a computer system, differentiate between Systems software and Applications software and for each give two examples (4 marks)
- f) For the e-mail address shown below, describe the functional significance of each of the parts labeled A, B and C. (6 marks)

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A B C

QUESTION TWO (20 MARKS)

- a) Draw a functional block diagram of the elements of a computer system and describe the functions of each section. (10 marks)
- b) On basis of technological advancement, explain the various generations of computers, clearly state the advantage of each over its predecessor generations. (10 marks)

QUESTION THREE (20 MARKS)

- a) Distinguish between volatile and non-volatile memory (2 marks)
- b) Describe the functions of Random Access Memory (RAM) and Read Only Memory ROM in a computer system. (6 marks)
- c) With reference to (b) above mention and compare the types of RAM and ROM that are available in the market. (6 marks)
- d) Explain the function of cache memory and its relationship on the overall performance of the computer system (4 marks)
- e) Describe with an example the role of registers in a computer system (2 marks)

QUESTION FOUR (20 MARKS)

- a) Explain the major applications of internet in business. (8 marks)
- b) Describe the reason why digital computers prefer to use binary numbers for operation (2 marks)
- c) Convert (6 marks)
 - i. $5405_{16} = ?_8$
 - ii. $11011_2 = ?_{16}$
 - iii. $2CD_{16} = ?_2$
- d) Convert the following binary numbers as indicated (4 marks)
 - i. 11000101011001.0011_2 to equivalent octal
 - ii. 01001001111000.001_2 to equivalent hexadecimal

QUESTION FIVE (20 MARKS)

- a) Discuss 5 key applications of computers in the society. (10 marks)
- b) Explain the difference between
 - i. overtypes and insert mode in word processing (2 marks)
 - ii. A hard page break and a soft page break (2 marks)
 - iii. Auto complete and autocorrect (1 mark)
- c) Describe the characteristics of the following categories of computers (5 marks)
 - i. Supercomputers
 - ii. Mainframe computers
 - iii. Workstations