



KENYATTA UNIVERSITY

UNIVERSITY EXAMINATIONS 2010/2011

FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR OF
INFORMATION TECHNOLOGY

SEIT 101: INFORMATION TECHNOLOGY FUNDAMENTALS

DATE: Monday 29th November, 2010

TIME: 2.00 p.m. – 4.00 p.m.

INSTRUCTIONS:

- **Answer question 1 and 2 others questions.**

- Q.1) a) Describe the five generations in the history of computer development. State the technological development associated with each of the generations. (10 marks)
- b) Computers can be classified according to Technology. Describe three types of computers classified according to technology (6 marks)
- c) Perform the following operations using the Number System indicated.
- i) $65 + 41$ (octal) (2 marks)
- ii) $FA345 - 5631$ (Hexa decimal) (2 marks)
- iii) $11110011 + 11111$ (Binary) (2 marks)
- iv) Convert 65 to binary (2 marks)
- v) $111011 \div 11$ (binary) (2 marks)

- d) i) What is an algorithm (1 mark)
- ii) Enumerate three conditions that every algorithm must satisfy (3 marks)
- Q.2) i) Describe four general types of flow charts (4 marks)
- ii) Draw a flow chart that show the sequence followed to out put the largest value of three inputs A, B, and C. (6 marks)
- iii) Draw a flow chart for computing the factorial $N!$ where $N! = 1 \times 2 \times 3 \times \dots \times N$. Include a loop (10 marks)
- Q.3) a) i) What is a computer program/ (1 mark)
- ii) Describe two low-level languages (2 marks)
- iii) State one advantage and one disadvantage of each of the languages you have described in (ii) above (4 marks)
- iv) Explain three features of a High-Level language (3GL) (3 marks)
- v) Give four examples of 3GLs (4 marks)
- vi) What are the three basic components of a Paschal Program? (3 marks)
- Q.4) a) Perform the following computation using the number System indicated:
- i) $1010 + 1111$ in binary (1 mark)
- ii) 101×11 in binary (1 mark)
- iii) $111011 \div 11$ in binary (1 mark)
- iv) $456 + 123$ in octal (1 mark)

- v) Convert the binary value 1010111110110010 into hexadecimal (1 mark)
 - vi) Convert ABCD from hexadecimal to decimal (2 marks)
- b)
- i) A Microcomputer has a main storage of 64MB. How many bytes of data can it store? (2 marks)
 - ii) Use the two's complement to perform the following Arithmetic operation
 - a) Subtract 2 from 7
 - b) 15-16 (2 marks)
- c)
- a) Define the following terms;
 - i) Batch processing
 - ii) on-line processing (2 marks)
 - b) List the advantages and two disadvantages of batch processing (4 marks)
 - c) Define Multi-tasking and give two examples of Multitasking operating systems (3 marks)
- Q.5)
- a) Describe five input devices explaining how they input data (10 marks)
 - b)
 - i) Describe the computer hierarchy of storage i.e. the 4 levels of storage (10 marks)
 - ii) Describe volatility in memory storage stating the two categories of volatility (2 marks)

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