



GRETSA UNIVERSITY - THIKA

**UNIVERSITY EXAMINATIONS
MAY - AUGUST 2018 SEMESTER**

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

COURSE CODE: BSCS 101

COURSE TITLE: FUNDAMENTALS OF COMPUTER SCIENCE

DATE: 8 AUGUST 2018

TIME: 3.00 PM – 6.00 PM

INSTRUCTIONS TO CANDIDATES

1. SECTION A IS **COMPULSORY**.
2. SECTION B: ANSWER ANY OTHER **THREE** QUESTIONS.
3. **DO NOT** WRITE ANYTHING ON THIS QUESTION PAPER AS IT WILL BE AN EXAM IRREGULARITY.
4. ALL ROUGH WORK SHOULD BE AT THE BACK OF YOUR ANSWER BOOKLET AND CROSSED OUT.

CAUTION: *All exam rooms are under CCTV surveillance during the examination period.*

SECTION A: COMPULSORY

Question One

- a) Define the following terms
- i. Data [2 marks]
 - ii. Information [2 marks]
 - iii. Register [2 marks]
 - iv. Computer bus [2 marks]
 - v. Cache [2 marks]
- b) Draw a diagram explaining the interaction of various units of a computer [8 marks]
- c) Define the term core in a processor [2 marks]
- d) Identify any three characteristics for each of the processor cores listed below
- i. Core i3 [3 marks]
 - ii. Core i5 [3 marks]
 - iii. Core i7 [3 marks]
- e) Convert the following binary numbers to their decimal equivalent
- i. 10101010 [2 marks]
 - ii. 11111111 [2 marks]
 - iii. 11110000 [2 marks]
 - iv. 00001111 [2 marks]
- f) Explain any three properties of hexadecimal numbers [3 marks]

SECTION B: ANSWER ANY OTHER THREE QUESTIONS

QUESTION TWO (20 MARKS)

- a) State and explain any five differences between tailor made and ready-made software [5 marks]
- b) Identify any five factors to consider when purchasing computer software [5 marks]
- c) Discuss any five emerging trends in computing [10 marks]

QUESTION THREE (20 MARKS)

- a) Differentiate between internal and external computer buses [4 marks]
- b) Explain the functions of the following bus standards
 - i. ISA [2 marks]
 - ii. PCI [2 marks]
 - iii. SCSI [2 marks]
- c) State and explain any five functions of a network interface card [5 marks]
- d) Discuss any five functions of anti-virus software [5 marks]

QUESTION FOUR (20 MARKS)

- a) Explain the functions of the following computer ports
 - i. Serial ports [2 marks]
 - ii. Fire wire ports [2 marks]
 - iii. Ethernet ports [2 marks]
 - iv. Modem ports [2 marks]
 - v. Sockets [2 marks]
- b) State and explain any three functions of a computer's cache [3 marks]
- c) Differentiate between RAM and ROM [4 marks]

QUESTION FIVE (20 MARKS)

- a) State and explain any five factors to consider when acquiring a video graphics card [5 marks]
- b) Discuss any five areas of theoretical computer science [5 marks]
- c) Discuss any five ways in which you can optimize the performance of a printer [5 marks]
- d) Explain any three situations where a fibre optic cable would be most ideal when creating a network connection [6 marks]