GRETSA UNIVERSITY - THIKA

UNIVERSITY EXAMINATIONS

MAY - AUGUST 2018 SEMESTER

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

COURSE CODE: BSCS 102

COURSE TITLE: PRINCIPLES OF OPERATING SYSTEM

DATE: 7TH 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) Discuss any five types of operating systems **[10marks]**

b) Explain the difference between the two common types of operating systems user interface **[6marks]**

c) Discuss how the operating system performs the following functions

i. Memory Management **[3marks]**

ii. Device management **[3marks]**

iii. Job scheduling **[3marks]**

iv. Storage management **[3marks]**

d) Discuss the concept of system calls and explain how they are performed within an operating systems environment **[12marks]**

SECTION B: ANSWER ANY THREE QUESTIONS

Question two

a) Discuss any five services of the operating system. **[10marks]**

b) Differentiate between fragmentation and paging as applied in memory allocation. **[5marks]**

c) With an example, discuss what a deadlock is. **[10marks]**

Question three

a) Explain the term inter-process communication (IPC) and explain its significance in operating systems environment. **[10marks]**

b) Explain the conditions that are necessary for a deadlock to occur. **[10marks]**

Question four

a) Explain how concurrency control occurs in operating systems during execution. **[10marks]**

b) Discuss any five functions of an operating system. **[10marks]**

Question Five

a) Discuss the various approaches that can be used to prevent deadlocks **[10marks]**

b) Describe how mutual exclusion is enforced during process execution **[10marks]**