The Co-operative University of Kenya

END OF SEMESTER EXAMINATIONS APRIL-2019

EXAMINATION FOR THE DEGREE OF BACHELOR OF STATISTICS & INFORMATION TECHNOLOGY (YR I SEM II)

UNIT CODE: BCIT 1207

UNIT TITLE: INTRODUCTION TO INFORMATION SYSTEMS

DATE: 25TH APRIL, 2019   **TIME: 2:00 PM – 4:00 PM**

INSTRUCTIONS:
Answer question **ONE (compulsory)** and any other **TWO** questions **Question one**

QUESTION ONE

(a) Define the following terms as used in Operating Systems   (5 marks)
   i. Signal
   ii. Pipe
   iii. Semaphore
   iv. Socket
   v. Stream

(b) Outline FIVE services provided by the OS   (5 marks)
(c) Briefly describe the boot up process of a windows based micro computer   (5 marks)
(d) Give FOUR similarities between processes and threads   (4 marks)
(e) Give the meaning of the term TRAP instruction and how it is related to a system call
                                                                               (3 marks)
(f) Give FOUR advantages of using RPC (Remote Procedure Calls) for communication between hosts in a networked environment   (4 marks)
(g) Explain the meaning of the terms below and point out their effect on performance of the computer from the users view   (4 marks)
   i. Pre-emptive multitasking
   ii. Non-pre-emptive multitasking

QUESTION TWO

(a) Define the term concurrency control as used in multiprocessing   (2 marks)
(b) Distinguish between the following pairs of terms   (4 marks)
   i. Multitasking and multiprocessing OS
   ii. Layered and micro-kernel OS architecture
(c) With respect to CPU process scheduling as performed by an OS
   i. Define the term process scheduling   (1 mark)
   ii. Outline the importance of scheduling in a computer system   (2 marks)
(d) Using a diagram, discuss the structure of UNIX operating system showing its THREE major components   (5 marks)
(e) State the THREE ways a process reacts to pending signals   (6 marks)

QUESTION THREE

(a) Multithreaded architecture is very pivotal in OS implementation and performance
   i. Define the term thread   (2 marks)
   ii. Give TWO importance of threads   (2 marks)

(b) Explain in detail the sequential and random file access pointing possible application situations.   (4 marks)

(c) Explain the purpose of the following icons in windows environment   (6 marks)
    i.   My computer
    ii.   Network
    iii. The Recycle Bin

(d) Explain THREE Memory Management Algorithms applied by computer operating systems
    (6 marks)

QUESTION FOUR

(a) Give TWO reasons why distributed computing systems are gaining popularity   (2 marks)

(b) The notion of a process is central to the understanding of OS
    i.   Define the term process   (2 marks)
    ii.   Highlight FOUR possible states that a process can be in   (4 marks)

(c) Contrast the following modes of processing   (6 marks)
    i.   Batch processing
    ii.   Time sharing
    iii. Multiprogramming

(d) Using illustrations differentiate the following types of systems   (6 marks)
    i.   Parallel systems
    ii.   Distributed systems