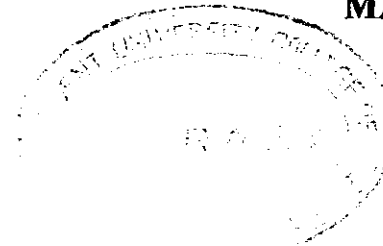


**REGENT UNIVERSITY**  
**COLLEGE OF SCIENCE AND TECHNOLOGY**



**EXAMINATION PAPER**

**END OF SEMESTER EXAMINATIONS,  
MAY 2007**



**COURSE: SICS 151: FOUNDATIONS OF COMPUTER  
SCIENCE**

**TIME: THREE HOURS**

**LECTURER: Issah Djaflor**

**ATTEMPT FOUR QUESTIONS IN ALL**

Q1: a) State and explain briefly, any three factors that can be used to determine computer's type.

- b) What are the **functions** of the central processing unit? Explain briefly the components of the CPU.
- c) State two functions of the **main memory** of a computer.
- d) What is **application software**? Distinguish between the **two** main types of application software.
- e) What are the major components of the **first** and **third** generations' computers?

Q2: a) What is meant by **three-tier application**?

- b) Explain briefly, any three primary functions of an **operating system**.
- c) When do we say a process is **blocked, running** and **ready**?
- d) What is a **process control block**? State five attributes of a process that can be found in the process control block.
- e) Explain the terms: **spooling, context switching** and **multiprogramming**.

Q3: a) Describe an algorithm for finding the largest element in a finite sequence of integers.

- b) Give a pseudocode description of the algorithm above.
- c) State the syntax of the IF ... THEN ... ELSE conditional statement for a range of multiple branching.

d) Give a flowchart of a program segment that calculates and average of series of numbers. The user will decide numbers are entered

Q4: a) What is a system analysis report?

- b) Distinguish between **economic, technical** and **operatio** feasibility of a system design.
- c) Describe the three **logic structures** and illustrate them with flowcharts.
- d) Distinguish between **pilot** and **direct** conversion methods.
- e) Give a flowchart that displays how a **factorial** of a given number can be calculated.

Q5: a) Explain briefly, the **four-stage** refined process of problem solving.

- b) Define **testing** in programming and distinguish between **white** and **black** box testing.
- c) In programming, every test must be fully documented before it is carried out. State the **five** key inputs to any **test documentation**.
- d) State and describe briefly, the **qualities** of a **good program**.
- e) Distinguish between a **presentation** and **programming language**.