

REGENT UNIVERSITY
COLLEGE OF SCIENCE AND TECHNOLOGY



EXAMINATION PAPER

**END OF 1st TRIMESTER EXAMINATIONS,
LEVEL 300 February 2009**

**COURSE: C Programming for Engineers
SICS 1513
SECTIONS B & C**

TIME: THREE HOURS

LECTURER: T. SOWAH

Please Read ALL Instructions

Attempt **ONE** question from each section

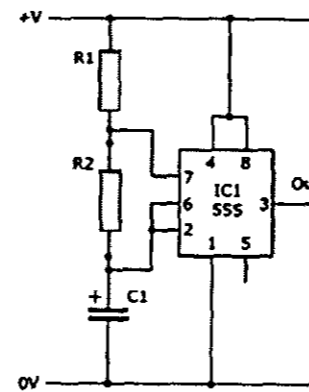
SECTION B

2. What are pointers? Explain your answer in detail.
[30 MARKS]
3. Explain with examples the use of the following:
 - a. for ... else
 - b. while
 - c. switch
 - d. header files
 - e. namespace

[30 MARKS]

SECTION C

4. Your company, **Mahama Electricals**, manufactures alarms and all forms of timing equipment mostly by the use of the 555 timer IC. With the use of functions, you have been tasked to write a code that determines the frequency of the pulse stream which invariably depends on the values of R1, R2 and C in an astable oscillator.



Using the following formula, allow the user to input values for C, R1 and R2.

$$f = 1 / (0.693 * C * (R1 + 2 * R2))$$

[30 MARKS]

5. **VAT Service** demands that you write a program for the calculation of 15% VAT on every item that is sold by **Melcom Ltd**. Your program should allow the user to enter the value of the item and then it should show the VAT component on the screen. Make use of functions to address their concerns.

[30 MARKS]