



"Investing in Africa's Future"

COLLEGE OF BUSINESS PEACE LEADERSHIP AND GOVERNANCE

PROBLEM SOLVING TECHNIQUES: CSC 100

END OF SECOND SEMESTER EXAMINATIONS: JUNE 2018

LECTURER: Mr.P Kwendesa

DURATION: 3 HOURS

INSTRUCTIONS

Answer **ALL** the questions in **Section A** and any **Three** questions from **Section B** and each question has **25** marks. Total possible mark is **100**.

Start **each** question on a new page on your answer sheet.

The marks allocated to **each** question are shown at the end of the section.

SECTION A

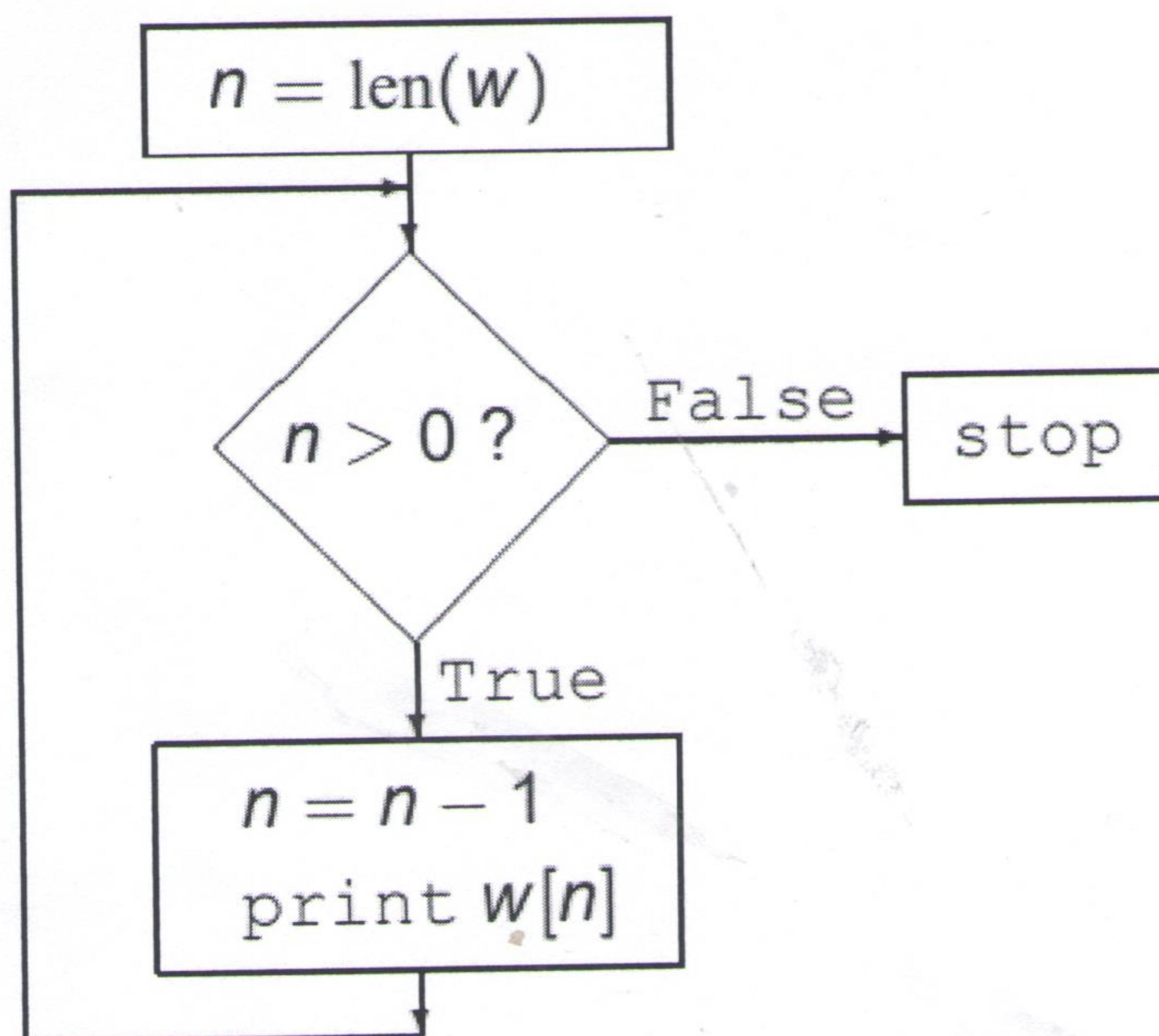
QUESTION ONE

- a) In order to solve a problem by the computer, one has to pass through certain stages or steps. What are they? [10 MARKS]
- b) Draw the flowchart for the algorithm to search for the maximum in a list of unsorted numbers. [15 MARKS]

SECTION B

QUESTION TWO

- a) Consider the flowchart, that takes on input the word w :



- b) Explain what the algorithm defined by the flowchart does, that is: write pseudo code. [15 MARKS]
- c) Redraw the flowchart that swaps the test with the body of the loop. [10 MARKS]

QUESTION THREE

- a) Describe the top down functional design for a program that takes orders in a fast food restaurant. The program should display a menu, prompt the customer to make a selection, calculate the price of the order, and then finally ask the customer to confirm the order. [25 MARKS]

QUESTION FOUR

- a) Discuss the importance of algorithms in the problem-solving process.
- b) Identify the necessary properties of good algorithms.
- c) Write a pseudo code to perform the basic arithmetic operations.

[10 MARKS]

[5 MARKS]

[10 MARKS]

Read n1, n2

Sum = $n1 + n2$

Diff = $n1 - n2$

Mult = $n1 * n2$

Quot = $n1/n2$

Print sum, diff, mult, quot

End.

QUESTION FIVE

- a) Write an algorithm and draw a flowchart to find out the biggest of the three-unequal positive numbers. [10 MARKS]
- b) ABC company plans to give a 6% year-end bonus to each of its employees earning \$6000 or more per month, and a fixed \$250 bonus to the remaining employees. [15 MARKS]
Draw a flowchart for calculating the bonus for an employee

END OF PAPER