

University of Swaziland

Department of Computer Science

Examination (Supplementary)

2017/2018

First Semester

Title of Paper: Introduction to Computer Science

Course Code: CSC111

Time Allowed: Three (3) Hours

Instructions: Answer any **Four** Questions. Don't write anything on the Examination Question paper.

You are not allowed to open this paper until you have been told to do so by the invigilator.

CSC111 INTRODUCTION TO COMPUTER SCIENCE (Supplementary)

Course Code: CSC111

Course Title: Introduction to Computer Science

QUESTION ONE

- a. List and explain five characteristics of FOSS Culture 10marks
- b. List five reasons why the learning of R programming is common to Data scientists and Engineers 5marks
- c. Write short notes on the following
 - i. Software
 - ii. Hardware10marks

QUESTION TWO

- a. Write an algorithm to solve a linear equation involving two unknowns 10marks
- b. Convert 12MB to GB 5marks
- c. List and explain five characteristics of Algorithms 5marks
- d. List and explain five characteristics of FOSSism 5marks

QUESTION THREE

- a. Write out the full meanings of the following
 - i. USB
 - ii. TCP/IP
 - iii. HTTP
 - iv. URL
 - v. FTP
 - vi. BIOS
 - vii. VGA
 - viii. ASCII
 - ix. MS-DOS
 - x. Intranet10marks
- b. Differentiate between the following
 - i. LAN and WAN 2marks
 - ii. Parallel and serial transmission 2marks
- c. Write short note on Flowchart, basically on its symbols and functions 11marks

QUESTION FOUR

- a. Write RScript code to solve a quadratic equation using a function 15marks
- b. Explain the four main categories of computer. 5marks
- c. Convert 15GB to TB 5marks

QUESTION FIVE

- a. List and explain the three different types of computer 9marks
- b. Write RScript to solve a linear equation involving two unknowns in R using IDE
 $2x+y=5$
 $3x-4y=10$
6marks
- c. The arithmetic expression below contains valid R expressions. For each of these expressions, give the value of the variable A on the right. The order of operations matter! R prioritizes so that it performs *, /, %%, then +, - operations. Note, it honors grouping into parenthesis.
 - i. $A = (2+3\%\%4)/(5-2)$
 - ii. $A = (2+3/4)/(5-1)$
 - iii. $A=(2\%\%6+4*5\%\%3-1)$10marks

QUESTION SIX

- a. List and explain the five common class objects used in R 5marks
- b. Write short notes on the following on social and ethical issues in Computer Science
 - i. Dependency
 - ii. Social justice
 - iii. Digital divide
 - iv. Privacy
 - v. Computer crime10marks
- c. Differentiate between continuous variables and categorical variables with the support of an illustrative examples 5marks
- d. Convert 7BA in hexadecimal to binary using direct method 5marks