UNIVERSITY OF ESWATINI

Faculty of Science and Engineering

Department of Computer Science

MAIN EXAMINATION

December 2018

Tittle of Paper: INTRODUCTION TO INFORMATION TECHNOLOGY

Course Code: CSC113

Time Allowed: 3 Hours   Total Marks: 100

Instructions to Candidates:

This Question Paper Consists of FIVE (5) Questions. Section A is Compulsory.

Answer Question 1 in section A and any other THREE questions from Section B

Marks are indicated in Square Brackets.

NB: *You Are Not Allowed To Open This Examination Paper Until Permission Has Been Granted By the Invigilator*

SECTION A (*Compulsory Question*)

QUESTION ONE   [25 MARKS]

a) What is a computer?   [2 Marks]
b) Explain any **FOUR** characteristics of a computer system.   [2 Marks]
c) Briefly explain what is hard copy and soft copy output devices giving one example of each.
                                                                     [4 Marks]
d) What are the **FIVE** basic elements that make up the computer system? Explain them briefly with the help of a diagram.   [5 Marks]
e) As an internet user highlight any **FOUR** disadvantages of internet.   [2 Marks]
f) Convert **1101.011$_2$** to its equivalent decimal number.   [3 Marks]
g) Briefly explain any **FOUR** advantages of networking.   [4 Marks]
h) Being an easy way of communicating the email has limitations. Highlight any THREE disadvantages of email.   [3 Marks]

SECTION B (*Answer any THREE questions from this Section*)

QUESTION TWO   [25 MARKS]

a) Briefly explain what a network is.   [2 Marks]
b) Briefly explain what you understand by RAM and ROM   [3 Marks]
c) Convert **(37.12)$_8$** to its equivalent binary do not use the shortcut method.   [4 Marks]
d) Explain the following types of networks VPN and PAN.   [4 Marks]
e) Explain what positional and non-positional number system is.   [4 Marks]
f) List and explain the four major types of instruction that always originate from the control section of the computer unit   [4 Marks]
g) What do you understand by Magnetic Storage and Optical Storage? Give examples of each.   [4 Marks]

QUESTION THREE   [25 MARKS]

a) As a developer differentiate between intranet and extranet.   [2 Marks]
b) Do the following binary arithmetic. 00100101 – 00010001.   [3 Marks]
c) Explain what are drivers and their functions in relation to Computing.   [4 Marks]
d) Simplify the following Boolean algebra $Z = (A + \bar{B} + \bar{C})(A + \bar{B}C)$ [4 Marks]
e) With the help of a diagram explain the star and ring topologies in computer networks.
                                                                     [4 Marks]
f) Explain the difference between freeware and shareware   [4 Marks]
g) What is the difference between Components and Peripherals? Give examples of each.
                                                                     [4 Marks]

QUESTION FOUR   [25 MARKS]

a) What is a Data Bus?   [2 Marks]
b) In relation to networking difference between LAN and MAN.   [3 Marks]
c) Do the following binary arithmetic. 00011010 + 00001100.   [3 Marks]
d) Briefly explain Remote Bridges and Wireless Bridges   [4 Marks]
e) Prove that $A + \overline{A} B = A + B$ algebraically.   [4 Marks]
f) Briefly explain what is the difference between a Software License and a Copyright
                                                                                 [4 Marks]
g) Draw the logic symbol of the NAND gate and the truth table.   [5 Marks]

QUESTION FIVE   [25 MARKS]

a) One of the ways to evaluate information is by using the **CRAAP** Test. Briefly explain what the CRAAP Test is   [5 Marks]

b) Draw the logic circuit diagram of the following equation $(A+B)(A+\overline{B}) = A$ [2 Marks]

c) Explain the different parts of an email address.   [3 Marks]

d) Convert each of the decimal numbers below to BCD.   [3 Marks]
   i. 546_{10}
   ii. 23.8_{10}
   iii. 5139_{10}

e) Briefly explain any **THREE** Effects of Computers to the Society.   [3 Marks]

f) Explain the following terms as used in computing.
   i)   Mainframe Computers
   ii) Super Computers
   iii) Data
   iv) Information   [5 Marks]
   v)   User Interface

g) Ethical issues can be summarized into four main categories. Briefly explain the following ethical considerations.   [4 Marks]
   i.   Privacy
   ii. Accuracy
   iii. Property
   iv. Accessibility