

# UNIVERSITY OF ESWATINI

Faculty of Science and Engineering

Department of Computer Science

## MAIN EXAMINATION

APRIL 2021

**Title of Paper: INTRODUCTION TO INFORMATION TECHNOLOGY**

**Course Code: CSC 113**

**Time Allowed: 3 Hours**

**Total Marks: 100**

**Instructions to Candidates:**

*This Question Paper Consists of FIVE (5) Questions. Answer ALL Questions.*

*Marks are indicated in Square Brackets.*

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

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**QUESTION ONE****[25]**

- 1.1 Briefly describe the contribution of the “Electro-Mechanical” era to the development of information technology. [2]
- 1.2 Briefly describe how cache is used by a CPU as additional form of memory. [3]
- 1.3 State the four (4) basic functions of a computer. [2]
- 1.4 What is meant by information technology? [2]
- 1.5 State and briefly describe computer development directions. [3]
- 1.6 Describe any two (2) characteristics of data. [2]
- 1.7 With the aid of an example; describe the machine cycle. [4]
- 1.8 How is the performance of a CPU measured? [4]
- 1.9 How does parallel processing work? [3]

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**QUESTION TWO****[15]**

- 2.1 Why is it important to update software? [1]
- 2.2 Describe the bootup process in detail. [3]
- 2.3 State two types of File Systems that can be used in Windows Operating Systems. [1]
- 2.4 Briefly describe the benefits of using:
- a. An open source suite e.g. Apache Open Office [2]
  - b. A proprietary suite e.g. Microsoft Office [2]
  - c. A cloud-based suit e.g. Google workplace (Formerly G Suite) [2]
- 2.5 State and describe the two (2) categories of software licenses. [4]

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**QUESTION THREE****[25]**

- 3.1 Define the following term:
- a. Protocol [1]
  - b. Backbone [1]
- 3.2 What are the benefits of using the fibre optic cable over the twisted-pair cables? [3]
- 3.3 Briefly describe the benefits of mobile phone networks in third world countries. [3]
- 3.4 Describe the following networks:
- a. Private Digital Network [3]
  - b. Public Telephone Networks [3]

- 3.5 Describe three (3) components of a Uniform Resource Locator (URL). [3]
- 3.6 What type of server is used to resolve domain names and URLs to IP addresses? [1]
- 3.7 What is the protocol that used to send email from both POP and IMAP? [1]
- 3.8 State and briefly describe three (3) types of user-generated content. [6]

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#### QUESTION FOUR

[15]

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- 4.1 State and explain three (3) goals of computer security. [3]
- 4.2 Briefly describe the following cybercrimes:
- a. phishing [2]
  - b. packet sniffing [2]
- 4.3 As an IT specialist in an organization, briefly describe how you would encourage and enforce safe computing in the organization. [3]
- 4.4 How would you restrict access on a computer that is shared by multiple user? [3]
- 4.5 Describe any two (2) ethical issues encountered in computing. [2]

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#### QUESTION FIVE

[20]

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- 5.1 Define the following terms:
- a. Blockchain [1]
  - b. Feasibility [1]
- 5.2 State three (3) functions of a Database Management System. [3]
- 5.3 State and explain four (4) characteristics of an algorithm. [4]
- 5.4 Describe the problem-solving phase of a program development cycle. [5]
- 5.5 In mathematics, the factorial of a positive integer  $n$ , denoted  $n!$ , is the product of all positive integers less than or equal  $x$ . For example,  $4! = 4 * 3 * 2 * 1$ . Write an algorithm and draw a flowchart for calculating the factorial of a number. [6]