UNIVERSITY OF ESWATINI

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE

RESIT EXAMINATION

JANUARY 2019

TITLE OF PAPER: COMMUNICATION FUNDAMENTALS

COURSE CODE: CSC121

TIME ALLOWED: 3 HOURS **TOTAL MARKS: 100**

INSTRUCTIONS TO CANDIDATES:

1. All questions carry equal marks.
2. **Question 1 is compulsory.**
3. Answer any 3 Questions from Question 2 to Question 5.
4. Marks for each question are indicated in square brackets.
5. Show all your workings where necessary.

THIS EXAMINATION PAPER SHOULD NOT BE OPENED UNTIL PERMISSION HAS BEEN GRANTED BY THE INVIGILATOR

Question 1

(a) Define the following terms. [5]

(i) Paging file

(ii) System software

(iii) Multitasking

(iv) Arithmetic Logic Unit

(v) Troubleshooting

(b) Discuss the design of the balanced technology extended motherboard, the advantages and disadvantages that come with the design. [5]

(c) The CPU of a computer is overheating and the technician decides to leave the casing open while using the computer. Will this solve the problem? Explain. [3]

(d) What is the main difference between system software and application software? [2]

(e) Give two examples of system software which are also utility software and two examples of application software. [4]

(f) A software reports that there is too much memory usage in a device and suggests some applications to close to free up some memory. What type of software is this? [2]

(g) List the four layers of the TCP/IP layered model. [4]

Question 2

(a) Discuss the two methods used to access data on a storage device, the advantages and/or disadvantages of each of the methods. [5]

(b) Which access method is used to access data from a hard disk drive? [2]

(c) Use a diagram to show how data is accessed from memory devices, from level 1 cache to secondary storage devices. [5]

(d) What type of peripherals can be connected on a PCI express slot? [2]

(e) Explain how a POST card can be used to troubleshoot hardware problems. [4]

(f) Discuss the concept of grid computing. [4]

(g) Explain the difference between a CD-ROM and CD-RW. [3]

Question 3

(a) Discuss the following function of an operating system. [6]

(i) Hardware independence

(ii) Provide a user interface

(iii) File management

(b) Defining the two terms. [4]

(i) Partition

(ii) Format

(c) What are the dangers of editing the registry file directly? What method can be used to counter the problem? [3]

(d) What three things can be learnt from an extension of a file? [3]

(e) Write the wild card specification that can be used to search for a file with the extension ***MPEG*** and has a file name beginning with ***F*** followed by at least one character. [2]

(f) Draw and label parts of a Windows desktop. [4]

(g) What is the Run program used for? List one advantage and one disadvantage of using it. [3]

Question 4

(a) Name and draw four types of network topologies? [8]

(b) State the class of IP addresses each of the following belongs to. [4]

(i) 192.168.10.1

(ii) 10.1.1.2

(iii) 135.78.10.5

(iv) 120.10.1.1

(c) List and discuss the four properties of a good network. [8]

(d) List the two transport layer protocols. [2]

(e) What are the three advantages of IPv6 over IPv4? [3]

Question 5

(a) Discuss the difference between RAM and ROM. [4]

(b) What information is stored in ROM? What happens to the computer once that information is deleted? [4]

(c) List the two network layer protocols. [2]

(d) A computer is sending a packet to a remote network. Explain how the layer 2 and layer 3 addresses change at each hop. **Use a diagram to show this.** [5]

(e) What is a software suite? Give an example. [2]

(f) Explain the concept of RAID for storage devices. [5]

(g) What are open source software, one advantage and one disadvantage of using it? [3]