



SCHOOL OF COMPUTING AND ENGINEERING SCIENCES (SCES)
BACHELOR OF SCIENCE IN COMPUTER NETWORKS AND CYBER SECURITY
END OF SEMESTER EXAMINATION
CNS1101 COMPUTING FUNDAMENTALS

DATE: 28th July 2023

Time: 2 Hours

Instructions

1. This examination consists of **FIVE** questions.
2. Answer **Question ONE (COMPULSORY)** and any other **TWO** questions.

Question 1 (30 Marks)

- I. A technician has been informed that multiple users are receiving duplicate IP address warnings on their workstations, and they are unable to browse the Internet. Which of the following server types should the technician log in to in order to resolve the problem?

(1 Mark)

- a) DNS server
- b) DHCP server.
- c) Proxy server
- d) RADIUS server

- II. Which of the following peripheral types is MOST likely to be used to input actions into a PC?

(1 Mark)

- a) Webcam
- b) Mouse
- c) Monitor
- d) Optical drive

- III. What is the function of RAM (Random Access Memory) in a computer?

(1 Mark)

- a) To store the operating system files
- b) To permanently store data and files
- c) To provide short-term memory storage for running programs and data
- d) To store the BIOS (Basic Input/output System) settings

- IV. Which of the following is a type of volatile memory?

(1 Mark)

- a) Hard disk drive (HDD)

- b) Solid-state drive (SSD)
 - c) USB flash drive
 - d) RAM (Random Access Memory)

- V. A technician is upgrading an ATX motherboard with another ATX motherboard. Which component might be affected by this and need to be upgraded and bought as an additional purchase? **(1 Mark)**
 - a) BIOS
 - b) CMOS battery
 - c) CPU
 - d) PCIe adapter

- VI. When a PC is being assembled, what component is connected to the motherboard with a SATA cable? **(1 Mark)**
 - a) The optical drive
 - b) The network interface card
 - c) The video card
 - d) The power supply

- VII. Which three features can be configured in the BIOS settings to secure a computer? (Choose three.) **(3 Marks)**
 - a) MAC filtering
 - b) Drive encryption
 - c) TPM
 - d) File encryption
 - e) TKIP key
 - f) Passwords

- VIII. A device has an IPv6 address of 2001:0DB8:75a3:0214:0607:1234: aa10:ba01 /64. What is the host identifier of the device? **(1 Mark)**
 - a) 2001:0DB8:75a3
 - b) 0607:1234: aa10:ba01
 - c) 2001:0DB8
 - d) ba01

- IX. Describe three major components of a computer and state two factors for each that you would consider when buying the components. **(6 Marks)**

- X. A software engineer is involved in the development of an application. For usability tests, the engineer needs to make sure that the application will work in both Windows 10 and Windows 11 environments. The features and functions must be verified in the actual OS environment. The engineer is using a Windows 11 workstation. State and explain any two technologies can help the engineer achieve the usability tests. **(4 Marks)**

- XI. Electrostatic discharge (ESD) occurs when there is a build-up of an electric charge and can cause permanent damage to electrical damage. List four measures you can take to prevent an ESD damage. **(4 Marks)**

- XII. Explain the difference between the following.
 - a. Dynamic Host Configuration protocol and Domain Naming System. **(2 Marks)**
 - b. Virtualization and Cloud Computing. **(2 Marks)**
 - c. System software and Application software. **(2 Marks)**

Question 2 (15 Marks)

- a. Name and describe four devices that are used in a network stating the layer in which they operate in. **(8 marks)**
- b. Explain the seven types of TCP/IP Attacks. **(7 Marks)**

Question 3 (15 Marks)

- a. Cloud computing provides users with on-demand delivery of computing services over the Internet. In details explain the various cloud services that can be tailored to meet customer requirements. **(6Marks)**
- b. By use of an example of a common PC problem explain how you would implement the six steps of troubleshooting. **(6 Marks)**
- c. Indicate the functions for each Windows Shell command below. **(3 Marks)**
 - i. CD
 - ii. DIR
 - iii. MD

Question 4 (15 Marks)

- a. List four different types of printers that you have learnt in class, explain the difference between the printer and state two merits and demerits of each type of printer. **(8 marks)**
- b. Explain the functionality of any three redundant array of independent disks technology that can be used to store data across multiple storage devices and give an advantage and disadvantage for each technology. **(6 Marks)**
- c. Explain what social engineering is all about. **(1 Mark)**

Question 5 (15 Marks)

- a. You have been consulted by your organisation again to help in buying a printer. Give a list of five things that you would emphasize on. **(5 Marks)**
- b. A network service is a capability that helps facilitate a network operation, its typically provided by client server relationship. List and explain four network services examples. **(8 Marks)**
- c. Explain the difference between a Domain and a Workgroup. **(2 Marks)**