

Dear Parents / Students

Due to the unprecedented situation, Knowledgeplus Training center is mobilized and will keep accompanying and supporting our students through this difficult time.

Our Staff will be continuously, **sending notes and exercises on a weekly basis** through **what's app and emails**. Students are requested to **copy the notes and do the exercises** on their copybooks.

The answers to the questions below will be made available on our website on knowledgeplus.mu/support.php

We thank you for your trust and are convinced that, together, we will overcome these troubled times

Computer Science – Week 4

Security measures designed to protect computer systems.

- **Password**

All accounts and resources must be protected by passwords. A password is a word (or string of characters) used for user authentication to prove identity or access approval to be able to gain access to a resource. It should be kept secret from those who are not allowed access. The password should not be shared among multiple systems.

Passwords should be chosen so that they are hard for an attacker to guess and to discover. The security of a password-protected system depends on several factors as well- these include shoulder surfing video cameras and keyboard sniffers.

In general, a password should satisfy the following requirements:

- It must be at least eight characters long.
- It must not be easy to guess (for e.g the user's birthday)
- It may include the combination of Upper Case letters lower case letters, numbers and special characters.
- It must be frequently changed.

• Firewall

A firewall is a system that prevents unauthorized use and access to your computer. It helps to protect your computer from many vulnerabilities that some worms may try to exploit. It usually blocks incoming attempts to a computer system. A firewall can be in the form of either hardware or software.

Hardware firewalls protect computers from most of attack coming from the outside world and can be purchased as a stand –alone product or in broadband routers. Unfortunately, hardware firewalls are less effective in protecting computers from viruses, worms and Trojans.

Individual home users usually make use of software firewall. A good software firewall will protect your computer from outside attempts to control or gain access to your computer, and usually provides additional protection against the most common Trojan programs or e-mail worms.

It is good point out that on its own, a firewall cannot get rid you of a computer virus. But it will add some extra security and protection for your computer when used in conjunction with regular operating system updates and an anti-virus.

• Encryption

Encryption is the process of encoding messages or information in such a way that only authorized parties can read it- therefore the data cannot be read if intercepted by an unauthorized person.

In an encryption scheme, the message or information, known as plaintext, is encrypted to produce the cipher text, which cannot be easily understood by unauthorized people. Decryption is the process of converting encrypted data back into its original form, so it can be understood by the destination device.

Theory Questions

1. Tick True or False next to each of these statements.

	True	False
A mainframe computer can handle vast amount of information at a time		
Supercomputers are the only types computer that can play games		
The Minicomputer is much more powerful than the Mainframe computer.		
A desktop computer is portable		
All computers have the same basic components		

2. A) What is a Personal Digital Assistant (PDA)?
B) State 2 differences between a PDA type computer and a desktop computer.
C) Suggest two advantages of a notebook computers over a desktop computer.
D) Suggest two disadvantages of a notebook computer when compared with a desktop computer.

3.

- a) List down 2 advantages of using ATM
- b) List down 2 disadvantages of using ATM
- c) Arrange the following in the required order for withdrawing money from an ATM

Take money, Enter Pin, Take receipt, Enter amount of money, Insert the ATM Card

- Step 1:
Step 2:
Step 3:
Step 4:
Step 5:

4.

- i. What is the Internet?
- ii. List two services offered by the internet
- iii. List three items needed to connect to the Internet.

5.

- i.State the difference between LAN and WAN?
- ii.Give one advantage and one disadvantages of LAN
- iii.Give one advantage and one disadvantage of WAN.

6.

- a) Name and draw two common types of network topology.
- b) Give two advantages of bus topology.
- c) List down 2 disadvantages of ring topology.