



## SLIATE

SRI LANKA INSTITUTE OF ADVANCED TECHNOLOGICAL EDUCATION

(Established in the Ministry of Higher Education, vide in Act No. 29 of 1995)

### Higher National Diploma in Information Technology

1<sup>st</sup> Year, First Semester Examination – 2015

HNDIT11022 Computer Hardware

Instructions for Candidates:

Answer only 04 Questions

No. of Questions: 05

No. of pages : 02

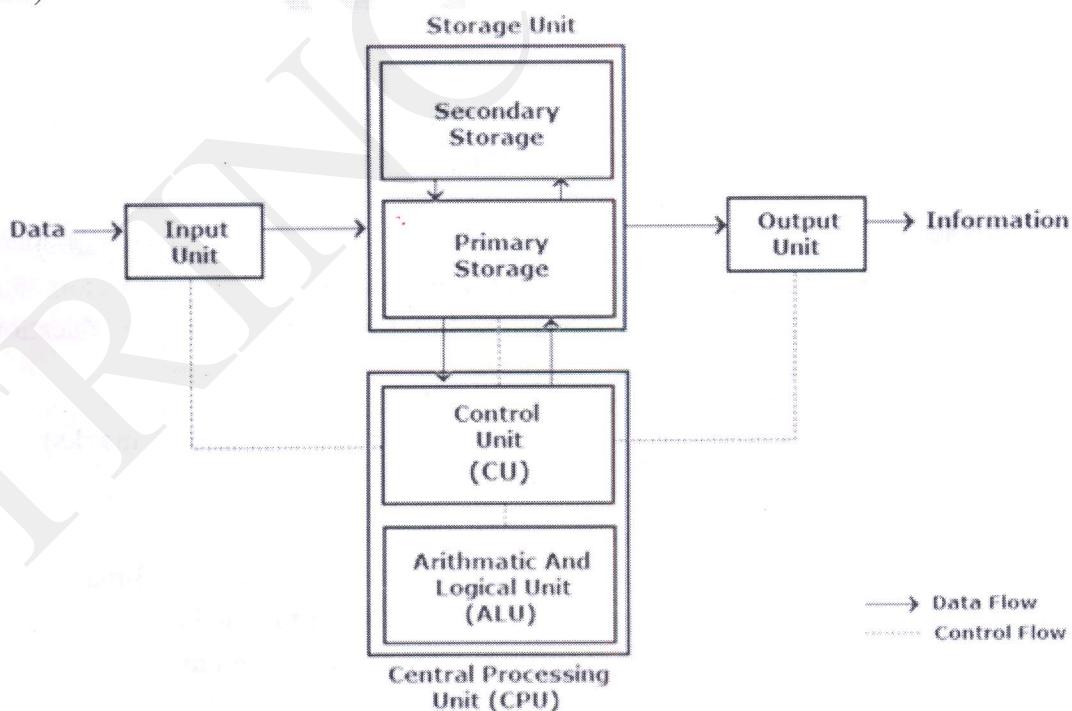
Time : 2 hrs

01.

I. What is meant by computer? (02 marks)

Programmable electronic machine which execute stored instructions for processing data

II. Draw a block diagram of computer and name the components (05 marks)



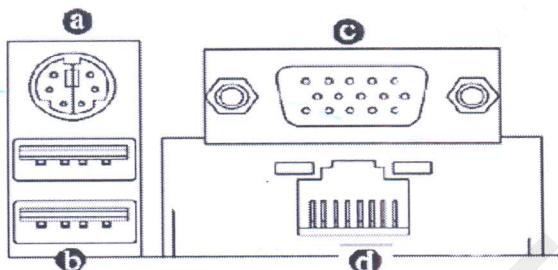
III. Explain differences between serial and parallel ports (02 marks)

- Serial ports transmit data one bit at a time.
- Parallel ports transmit more than one byte at a time parallelly.

IV. Compare and contrast between shut down and hibernate (04 marks)

Shut down	Hibernate
Computer close all open files (in main memory)	Computer save all open files (in main memory to auxiliary memory)
When you boot up the computer, you can't resume previous work	When you boot up the computer, it will load the previous state from your hard drive into its RAM

V. Identify the following components in main board back panel (04 marks)



- PS2 (key board or mouse)
- USB
- VGA
- RJ45 or Network

VI. Briefly describe followings

a. UPS

(04 marks)

Electrical equipment that provides emergency power to a load when the input power source, typically mains power, fails

b. USB

(04 marks)

Industry standard developed that defines the cables, connectors and communications protocols used in a bus for connection, communication, and power supply between computers and electronic devices.

**(Total 25 marks)**

02.

I. What is meant by modular design? (03 marks)

Design approach that subdivides a system into smaller parts called modules that can be independently created and then used in systems.

II. What are the advantages of modular design (03 marks)

- Flexible structure
- Easy to maintain
- Easy to upgrade

- d. Customizable
- III. What are the deferent modules found in personal computer? Name three(03 marks)  
Motherboard, Memory modules, Secondary storage, Power supply, CPU
- IV. What is the use of expansion slots (03 marks)  
Type of slots located inside a computer on the motherboard that allows additional circuitry boards to be connected to it.
- V. Name two types of expansion slots (02 marks)  
ISA, PCI, PCI Express, AGP

vi) Name three deferent types of communication buses (03 marks)  
Data, control, address

- VI. Briefly describe followings (04 marks)
- a. Power supply  
The device, which manage the system power. It converts AC current to DC current and supply to all components.
- b. System Cabinet (04 marks)  
This is the covering shell which is designed to accommodate the following all modules of a PC.
- (Total 25 marks)**

- 03.
- I. What is meant by form factors (02 marks)  
Size, shape, and screw placement on a motherboard.
- II. Give any 3 Precautions you will follow during computer assembling? (03 Marks)  
  - Discharge the static charges yourself before handling hardware
  - Disconnect the power before working on the system
  - Return the main board and peripherals to anti-static bags
- III. What is multi core processor (03 marks)  
Intergrated circuit which combines two or more independent processors into a single package
- IV. What is the use of BIOS configuration utility ? (03 marks)

Utility software used by system user in configuring BIOS settings

- V. What is meant by formatting? (02 marks)

Preparing a hard disk drive or other storage medium with a file system

- VI. What are the advantages of NTFS formatting (04 marks)

- a. High security with Encryption
- b. File compression
- c. Recoverability
- d. Faster access
- e. Longer file names

- VII. Briefly describe followings

- a. hardware compatibility list (HCL) (04 marks)

List of computer hardware which is compatible with a particular operating system or device management software

- a. Power on Self Test (POST) (04 marks)

Process performed by firmware or software routines immediately after a computer or other digital electronic device is powered on.

**(Total 25 marks)**

04.

- I. Describe what are device drivers and its tasks? (04 marks)

A computer program that operates or controls a particular type of device that is attached to a computer.[1] A driver provides a software interface to hardware devices, enabling operating systems and other computer programs to access hardware functions without needing to know precise details of the hardware being used.

- II. Explain, what is Device Manager? (04 marks)

A utility software tool in Microsoft Windows operating systems. It allows users to view and control the hardware attached to the computer

- III. State five (03) uses of Device Manager? (03 marks)

- a. Change hardware configuration settings.
- b. Obtain information about each device driver.
- c. Install & updated device drivers.
- d. Disable, enable, and uninstall devices.
- e. Reinstall the previous version of a driver.
- f. Identify device conflicts and manually configure resource settings.

- g. Print a summary of the devices that are installed on your computer.
- IV. What is meant by plug and play? (03 marks)  
An automate process which facilitates the discovery of a hardware component in a system without the need for physical device configuration or user intervention in resolving resource conflicts
- V. Why do we need to restart the computer sometimes, after installing drivers (03 marks)
- VI. Briefly describe followings  
a. IRQ (04 marks)  
Hardware signal sent to the processor that temporarily stops a running program and allows a program to run.
- b. Disk Management Utility software in MS Windows (04 marks)  
The software tool which support management of Secondary storage devices. Thos tool help to partition, defragment, cleaning, and other operation on disk drives
- 05.
- I. What is a user account? (02 marks)  
A collection of information which include user privileges
- II. Why uer accounts are required in operating systems (02 marks)  
To secure system resource
- III. What is Control panel (02 marks)  
A utility software tool in Microsoft windows operating system to manage and administrate the resources in computer system
- IV. What is meant by utility programs (02 marks)  
Software designed to help analyze, configure, optimize or maintain a computer. Utility software usually focuses on how the computer infrastructure operates.
- V. What are the reasons to slow down a PC? Mention two. (03 marks)  
Incompatible Hardware  
Low system memory  
Malicious Software

- VI. Propose necessary actions to avoid above mentioned situations to slow down a PC (06 marks)
- Compatibility of hardware and software  
Add additional RAM modules  
Install and update antivirus scanners

- ~~Ways to prevent~~
- VII. Briefly describe followings (04 marks)
- c. Disk Defragmentation  
Disk defragmentation is the process of consolidating fragmented data on a volume (such as a hard disk or a storage device) so it will work more efficiently.
- a. Antivirus Software (04 marks)  
Antivirus or anti-virus software (often abbreviated as AV), sometimes known as anti-malware software, is computer software used to prevent, detect and remove malicious software

**(Total 25 marks)**