



Higher National Diploma in Information Technology

First Year, First Semester Examination – 2018

HNDIT-1102 Computer Hardware

Marking Scheme

Instructions for Candidates:

Answer Four (04) Questions only

No. of Questions : 05

No. of pages : 03

Time : 02 Hours

Question 01

- 1) Give **two (02)** examples for Output Devices used in computers? (02 Marks)

Printer, Plotter, Printer, Speaker, Projector or any other acceptable answer

(01 Mark for each suitable answer)

(01x02 = 02 Marks)

- 2) Mention **three (03)** important characteristics of Computers. (03 Marks)

– Accuracy

– Speed

– storage

– Diligence

– Versatility

– reliability

(01 Marks for each suitable answer)

(01 x 03 = 03 Marks)

- 3) Compare and contrast Primary and Secondary Storage in Computer Systems. (04 Marks)

Primary Storage	Secondary Storage
<i>Directly accessible to CPU</i>	<i>Not directly accessible by the CPU</i>
<i>Ex: Registers, Cash memory, RAM</i>	<i>Ex: Hard Disk, CD, DVD</i>
<i>Volatile Memory</i>	<i>Non-volatile memory, Does not lose stored data when the device is powered down</i>
<i>Information stored for short term usage</i>	<i>Information stored for Long term usage</i>
<i>Location which CPU find instructions to execute</i>	

For any two acceptable answers –(04 Marks)

4) Identify the following abbreviations.

(05 Marks)

a) OCR - *Optical Character Recognition*

b) CPU – *Central Processing Unit*

c) ALU – *Arithmetic and Logic Unit*

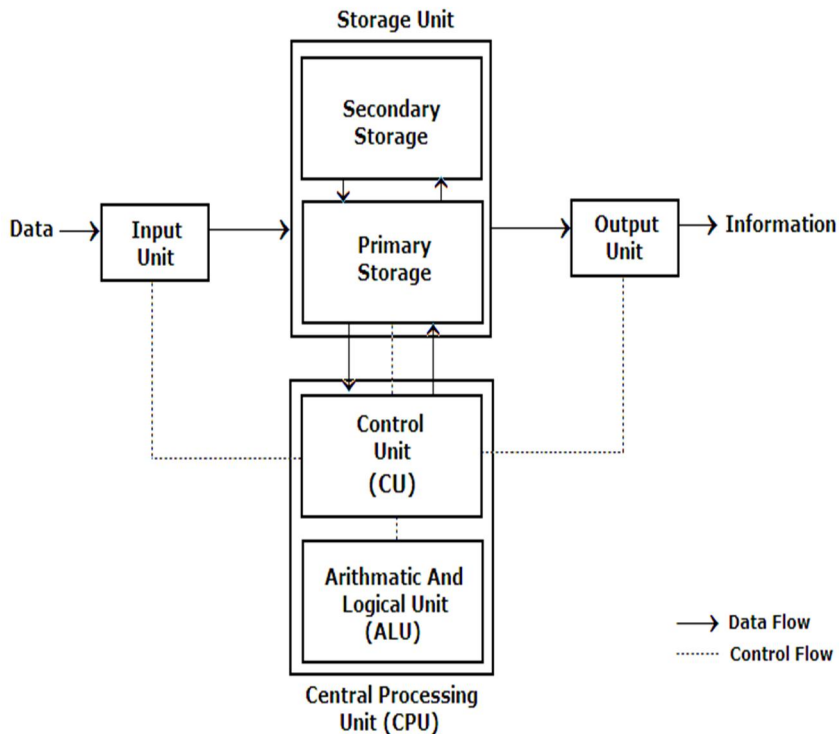
d) DVD – *Digital Versatile Disk*

e) VGA – *Video Graphic Adapter*

(01 Mark for each correct answer)

(01x 5= 05 Marks)

5) Draw the block diagram of computer and show the data and control information flow in the same diagram. (11 Marks)



Clear Mentioning of :

Input Devices – 01 Mark

Output Devices – 01 Mark

Control Unit – 01 Mark

ALU – 01 Mark

Primary Storage – 01 Mark

Secondary Storage – 01 Mark

Showing CPU – 01 Mark

Correct information Flow with arrows - (02 Marks)

Correct Control information flow with arrows (control signals goes to every input,output devices, processing, and storage devices.) (02 Marks)

Question 02

- 1) Briefly explain 'Disk Partitioning'. (03 Marks)

*divide the hard disk **logically in to separate sections** is called Disk Partitioning.*

Creation of one or more regions on a hard disk or other secondary storage *(03 marks)*

- 2) Briefly explain the term 'Device Driver'? (04 Marks)

*A device driver is a **computer program** that **operates or controls a connected device** to the computer.* *(04 Marks)*

for the keywords :

(Computer Program – 02 Marks)

(Operate or controls a connected device – 02 Marks)

- 3) Describe the following two permission levels used in user access Rights in windows operating system. (04 Marks)

a) Full Control

User have Read, Write , Execute , Modify Permissions to a file or a directory *(02 Marks)*

b) Read and Execute

User have only read and Execute permissions for a file. *(02 Marks)*

- 4) Describe the function of BIOS Program. (04 Marks)

-It is the program a personal computer's microprocessor uses to get the computer system started after you turn it on.

-Storing Date and Time Settings of the computer's

-Perform Power on Self Test (POST)

for any two answers (02 Marks X 2 = 04 Marks)

5) Mention **four (04)** functions of Device Manager in Windows operating system. (04 Marks)

*Allows users to view and control hardware
Include facilities for view List of Devices in computer
Associated device drivers of HW devices
Identify Devices by type
Change hardware configuration settings.
Obtain information about each device driver.
Install & updated device drivers.
Disable, enable, and uninstall devices.
Reinstall the previous version of a driver.
Identify device conflicts and manually configure resource settings.
Print a summary of the devices that are installed on your computer.*

for any four answers (01 Marks X 4 = 04 Marks)

6) Explain the purpose of User Account and mention **three (03)** User Account types in Windows 7. (06 Marks)

User Accounts

*A collection of information which include user privileges
Provide unique settings and preferences for users
Included in the OS*

Control:

*What files and folders a user can access
What operations user can perform
What are the user's personal preferences
Desktop background
Themes*

(Give 3 marks for 03 acceptable answers)

Three type of User Account in Windows 7.

- 1. Administrator account*
- 2. Standard user Account*
- 3. Guest account*

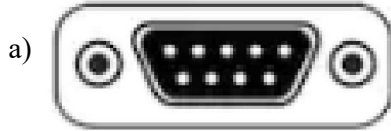
(Give 01 Marks for each account type [01x3=03 Marks])

Question 03

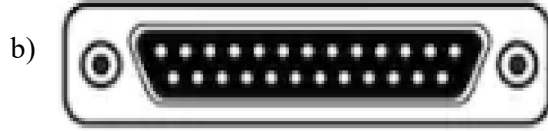
- 1) What is the purpose of CMOS Battery in a Motherboard? (02 Marks)

Provide power to store the date and time value and the settings in the mother board.

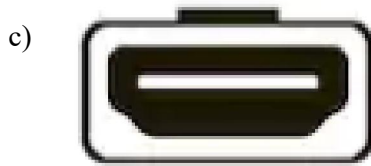
- 2) Identify and write the names of the following Computer Ports (03 Marks)



Com Port / RS232 Port



Printer Port / Parallel Port



HDMI Port

(01X3=03 Marks)

- 3) Give **two (02)** Touch Screen mechanisms. (04 Marks)

Capacitive Touch Screens

Resistive Touch Screens

Infra Red Touch Screens

Surface Acoustic wave touch Screens

(Each answer 02 Marks) (02 x 2 = 04 Marks)

- 4) State **two (02)** devices which can be connected to PC motherboard with SATA port.

DVD Rom, CD Rom, Hard Disk Drives

(04 Marks)
(02 x 2 = 04 Marks)

- 5) Explain the **three (03)** Advantages of Laser Printers with compared to Dot Matrix Printers.

(06 Marks)

<i>Laser Printers</i>	<i>Dot Matrix Printers</i>
<i>Fast than Dot Matrix printer. Can print pages per minute</i>	<i>Slow compared to laser printer</i>
<i>Quality of printouts is higher than Dot Matrix Printers.(Resolution is higher)</i>	<i>Resolution of the printout is lower in Dot Matrix Printers</i>
<i>Less noise compared to Dot Matrix printers</i>	<i>Noise is higher in Dot Matrix Printers</i>

(One fact 02 Marks) (02X3=06 Marks)

- 6) Briefly discuss any **three (03)** health and safety precautions that should be taken during the assembly or disassembly of a Computer System. (06 Marks)

- Try not to work in carpeted areas to avoid static electricity buildup within body.
- Personal Protective Equipment are correctly used.
- Always handle electronic components by a non-conducting (non-metallic) edge. Don't touch the pins or other connectors.
- Read and follow instructions on the manual carefully.
- Avoid places that are damp, subject to temperature extremes, dirty, or dusty.
- Avoid short circuits
- Always disconnect a computer from the AC power and from any powered peripherals while working on it.

(Give 02 Mark for each correct or any acceptable answer)
(02X3 = 06 Marks)

Question 04

- 1) Briefly explain the term 'Virtual Memory'. (02 Marks)

- Virtual memory is a capability of operating system to manage the physical memory shortages with the help of hard disk storage(Disk Storage)
- Method of extending RAM for running programs capacity
- It uses to copy inactive memory from RAM to hard disk

- 2) Write **one (01)** advantage of FAT 32 with compared to FAT 16 file system (02 Marks)

FAT 32	FAT 16
No limitations for file name length	File names are limited to 8 characters
Support drives up to 2 TB	Originally designed for use on small partitions up to 4GB

(For one fact 02 Marks)

- 3) The following Image shows the internal structure of a typical Hard Disk. (03 Marks)

Identify and write the names of the components marked with (a), (b) and (c).

a- Sector

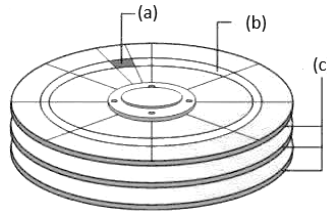
b- Track

c- Platter/Platters

(01 X 3 = 03 Marks)

- 4) Define the term “Volatile Memory”. (04 Marks)

Data stored inside the memory is lost when there is a power failure.



- 5) Provide **two (02)** examples of Mutable memory. (04 Marks)

Hard Disk, Flash Drives, Floppy Drives or any acceptable memory which can read and write data.

(02X2 = 04 Marks)

- 6) Mention **two (02)** advantages of taking backups in computer systems? (04 Marks)

*If there is a virus attack to the system, the **system can be restored** with the backup.*

*System can be recovered from a natural disasters with the help of backups and **service continuity** can be done.*

(02X2 = 04 Marks)

- 7) Compare and contrast LCD Display and CRT Display. (06 Marks)

LCD Display	CRT Display
Small in size	Large is size
Cost is higher	Cost is lower.
Higher Picture quality	Lower picture quality with compared to LCD
Latest Technology	Out dated Technology
Less weight	Higher weight
Less Power consumption	Higher Power consumption
Less harm to health	Higher damages to health compared to LCD. (Emits X-ray and Gamma Rays)

(01 X 06 = 06 Marks)

Question 05

- 1) Mention **two(02)** advantages of modular design approach in Computer Hardware.(02 Marks)

-Flexible structure

-Easy to maintain

-Changes in one module is not going to effect to the other

-Easy for standardization

or any other acceptable answer

(01 X 02 = 02 Marks)

- 2) State **three(03)** expansion cards used in computers. (03 Marks)

VGA Card, Sound Card, TV Card, Modem Card, Network Card

or any other acceptable card

(01x 3=03 Marks)

- 3) What is a “**Plug and Play device**”? State two plug and play devices. (04 Marks)

devices which can be plug and use with out installing driver software for the device

(Correct description – 02 Marks)

Example :

Monitor, Key board, Mouse or any other acceptable answer (for two devices - 02 Marks)

- 4) Mention **four (04)** factors that affects the performance of a Processor? (04 Marks)

Number of cores in processor

Clock speed of the processor

Front side bus (FSB) speed of processor

Cache memory size of the processor

(01 x 4 = 04 Marks)

- 5) Briefly explain Multitasking and Multiprocessing. (04 Marks)

Multitasking:

*Enables the processor to do **multiple programs simultaneously by fast switching through the programs**. Here doesn't have the involvement of multiple processors.* *(02 Marks)*

Multiprocessing:

*Enables the processor to do **multiple programs simultaneously by the use of multiple processors**.* *(02 Marks)*

- 6) Briefly explain purpose of Leap Motion Sensor. (04 Marks)

-Device which capable of capturing hand movements and finger moments and input them to computer same like a Mouse.

-But this device do not require any touch or contact with the device.

-Leap Motion Sensor detects hand and finger motions with out any contact.

-Sensor is used for Virtual Reality applications

correct explanation what a leap motion sensor

(04 Marks)

Note :

(Maximum 04 Marks for 04 facts)

(Minimum 01 Marks for 01 fact)

- 7) Write the steps to do the following operations in Windows 7 Operating System. (04 Marks)

a) Create a New Folder in Desktop

Right Click on the Desktop and select New Folder Option and insert the required folder name and press Enter

or any other acceptable answer which can create a folder

(02 marks)

b) Delete a File in Desktop

-Select the file you want to delete and right click on it and select the delete option.

-Select the file and press Shift and Delete keys at the same time. And select option Yes form confirmation message box

or any other acceptable answer which can delete a folder

(02 marks)