

NCC EDUCATION

**INTERNATIONAL DIPLOMA
IN
COMPUTER STUDIES**

**FUNDAMENTALS OF HARDWARE
AND
OPERATING SYSTEMS**

DECEMBER 2008 – LOCAL EXAMINATION

SECTION A

Answer all questions from this section.

SECTION B

Answer any 2 questions from this section.

Time: 2 hours

Clearly cross out surplus answers.

Failure to do this in Section B will result in only the first two answers being marked.

**Any reference material brought into the examination room must be handed
to the invigilator before the start of the examination.**

SECTION A**ANSWER ALL QUESTIONS IN THIS SECTION**

	Marks
QUESTION 1	4
Briefly describe any FOUR (4) major sub-components available inside a system unit.	
QUESTION 2	4
Differentiate between the terms <i>RAM</i> and <i>ROM</i> .	
QUESTION 3	4
Briefly describe the term <i>character framing</i> .	
QUESTION 4	4
Distinguish between <i>maskable</i> and <i>non-maskable interrupts</i> in a microcomputer.	
QUESTION 5	4
Briefly describe the purpose of the <i>kernel</i> in operating systems.	
QUESTION 6	4
Define the term <i>protocol</i> and give TWO (2) examples of a protocol.	
QUESTION 7	4
Name and explain the operation of any TWO (2) <i>backup techniques</i> in a computer.	
QUESTION 8	4
Explain the purpose of the <i>scandisk</i> and <i>defrag</i> command-line utilities.	
QUESTION 9	4
Briefly explain the use of a <i>setup disk</i> and an <i>emergency repair disk</i> in a computer.	
QUESTION 10	4
Briefly explain how a <i>boot-sector virus</i> and a <i>file infector virus</i> infect a computer system.	

Total 40 Marks**QUESTIONS CONTINUE ON NEXT PAGE**

SECTION B
ANSWER ANY TWO QUESTIONS

QUESTION 1	Marks
A) Describe the purpose of the <i>Small Computer Systems Interface (SCSI)</i> in a computer.	3
B) Briefly describe the importance of the <i>USB</i> interface standard in a computer.	4
C) Define the term <i>polling</i> .	3
D) How does <i>Direct Memory Access (DMA)</i> work and describe why is it useful.	5
E) Describe what a <i>RAID</i> is and briefly explain how <i>level 0 RAID</i> stores the information on a disk.	5
F) Explain the operations of the Windows <i>Infrared Monitor</i> utility in a computer.	5
G) Describe the purpose of a <i>UPS</i> in a computer.	5
Total 30 Marks	

QUESTION 2

A) Explain the various factors that should be considered when measuring the performance of a <i>HDD</i> in a computer.	12
B) What is an <i>EDO DRAM</i> ?	2
C) Describe the structure and operations of <i>star, bus, ring, and mesh</i> LAN topologies.	16
Total 30 Marks	

QUESTION 3

A) List the FOUR (4) major problems that may be encountered whilst performing a clean operating system installation.	4
B) What is an <i>IP Subnet</i> ?	2
C) Briefly explain the THREE (3) common reasons for creating a subnet.	9
D) Explain the term “ <i>Blue Screen Of Death (BSOD)</i> ”.	3
E) Explain the purpose of the “ <i>Power On Self Test (POST)</i> ” in a computer system.	12
Total 30 Marks	

END OF PAPER