higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

COMPUTER HARDWARE AND SOFTWARE
NQF LEVEL 3

(10041013)

4 November 2022 (X-paper)
09:00–12:00

This question paper consists of 11 pages.

047Q1N2204

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TIME: 3 HOURS
MARKS: 150

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
2. Read all the questions carefully.
3. Number the answers according to the numbering system used in this question paper.
4. Start each question on a new page.
5. Use only a black or a blue pen.
6. Write neatly and legibly.

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SECTION A

QUESTION 1

Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (1.1–1.10) in the ANSWER BOOK.

1.1 Identify the image below.



A Plotter
B Head light
C External hard drive
D Data projector

1.2 Identify the image below.



A Portable storage media
B CPU
C Power bank
D External hard drive

1.3 Identify the image below.



A Printer
B Computer
C Photocopier
D Scanner

1.4 Identify the image below.



A CRT monitor
B LCD monitor
C Flat screen TV
D Rear projection TV

1.5 Identify the image below.



A Keyboard
B Touchpad
C Pointer
D Trackball

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1.6 A milestone is a …

☆

A point which, if set, one can return a computer to an earlier functional state
B point which is difficult to reach in an installation
C pre-defined point in a process for measuring progress made
D heavy weight around the neck that prevents progress

1.7 Identify the image below.



A Microphone
B Game controller
C Headset
D Speakers

☆

1.8 Identify the image below.



☆

A Virtual reality headset
B Microphone
C Eye protector
D Game controller

☆

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1.9 Identify the image below.



A Touchpad
B Mouse
C External hard drive
D Fingerprint scanner

1.10 Identify the image below.



A Webcam
B Digital SLR camera
C CCTV camera
D Trackball

(10 × 1) **[10]**

QUESTION 2

Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (2.1–2.5) in the ANSWER BOOK. Give ONE reason for each answer.

2.1 Thermal paste should be applied after installing the CPU heat sink.

2.2 A computer can only cause a fire hazard if plugged into a wall socket.

2.3 Software for peripherals supplied by the manufacturer rarely includes device drivers for the make and model of the peripheral.

2.4 Laptop RAM modules are considered to be CRU.

2.5 Diagnostic software is only available for hardware problems.

(5 × 2) **[10]**

QUESTION 3

Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–L) next to the question number (3.1–3.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
3.1	… are two safety hazards when dealing with laser printers	A	ESD
3.2	Specify procedures for dealing with potentially hazardous materials	B	software bug
3.3	Cleaning the inside of a computer reduces the accumulation of …	C	HDMI
3.4	A second stage or step in the troubleshooting process	D	ACPI
3.5	A fault in a computer program or system that causes it to produce an incorrect or unexpected result	E	the collate feature
3.6	A port on a notebook used for connecting a data projector	F	establishing a theory of probable causes
3.7	A tool for technicians to configure power management schemes on laptops	G	safety data sheet
3.8	… enables a printer to sort multiple copies of a document with the proper page order for each copy	H	high voltage and hot components
3.9	.... enables a PC to synchronise with new group policy settings	I	CPU and power supply
3.10	May cause a computer to suddenly reboot without the intervention of a user	J	gpupdate command
		K	VMware
		L	dust

(10 × 1) **[10]**

TOTAL SECTION A: 30

SECTION B

QUESTION 4

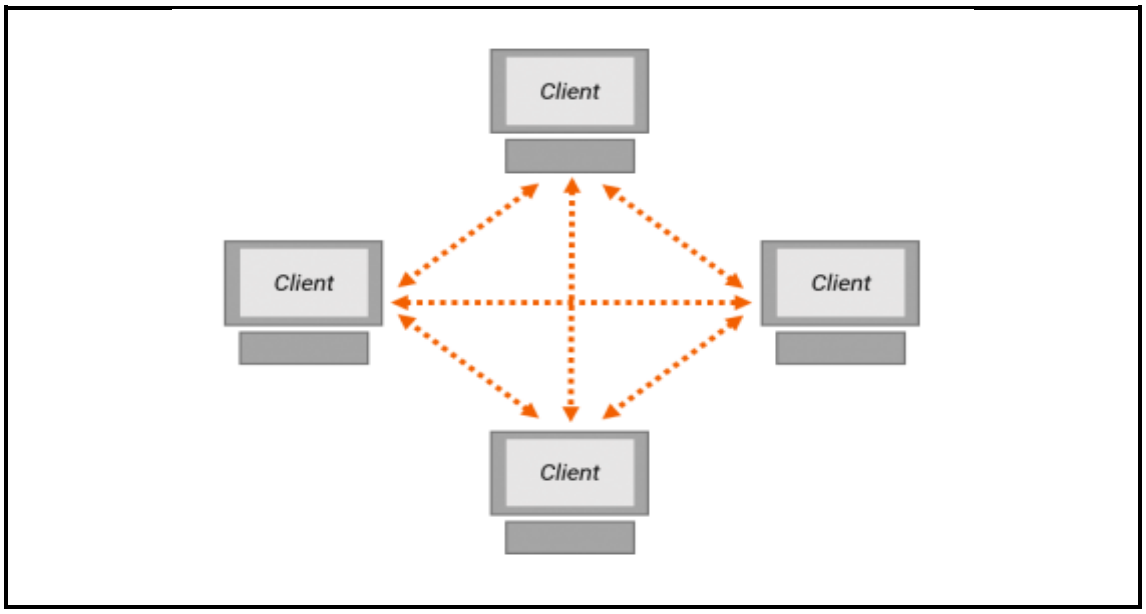
Modern computers run UEFI instead of BIOS. UEFI provides additional features and addresses security issues that existed with the legacy BIOS. Manufacturers continue to label their UEFI programs with 'BIOS' so that users know that it supports the same functions that BIOS supported.

List TEN UEFI-BIOS settings that can be configured or changed on a modern computer. **[10]**

QUESTION 5

5.1 Name any THREE steps in implementing solutions. (3)

5.2 The image below depicts a peer-to-peer network configuration.



State THREE characteristics of a peer-to-peer network configuration. (3)

5.3 Write the following acronyms in full:

5.3.1 PCB

5.3.2 ALU

5.3.3 SRAM

5.3.4 CMOS

(4 × 1) (4)

5.4 Describe the following power supply form factors.

5.4.1 ATX 12V

5.4.2 EPS 12V

5.4.3 AT Extended (ATX)

(3 × 2) (6)

5.5 What is an SSD? (2)

5.6 Explain how an SSD works. (2)
[20]

QUESTION 6

Read the scenario below and answer the questions that follow.

You have started your own small IT Business specialising in software installation and most of your clients are the students that you attend college with. Your clients always request for different types of programs to be installed on their computers. Because of study-related commitments, you understand that planning and estimation of both time and resources required for you to keep your clients satisfied is very important. Furthermore, you always offer advice to your clients on how they should locate their hardware units in compliance with manufacture's guidelines.

6.1 State FOUR factors that one would consider when planning software installation for clients. (4)

6.2 Draft a sample form that one will use for both time estimation and required resource determination or identification. (10)

6.3 List and briefly explain FIVE causes of computer hardware maintenance. . (5 × 2) (10)

6.4 What advice would you give your clients on where to find software drivers for their peripherals? (1)
[25]

QUESTION 7

7.1 Explain FIVE non-functional tests carried out by personnel in charge of IT systems testing. (5 × 2) (10)

7.2 State TWO types of isolation tests. (2)

7.3 Explain what is meant by *test deliverables*. (2)
[14]

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QUESTION 8

8.1 Good IT professionals understand the importance of regular and systematic inspection, cleaning, and replacement of worn parts, materials, and systems. This is called preventative maintenance.

8.1.1 List any SIX benefits of preventative maintenance. (6)

8.1.2 List and briefly explain THREE types of preventative maintenance. (3 × 2) (6)

8.2 One of the most critical precautions to be undertaken before troubleshooting technical computer problems is data backup. Data backup is a copy of the data on the computer's hard drive that is saved on another storage device or cloud storage.

8.2.1 List THREE items to verify with a computer user/s to confirm if data back-up has been performed or not. (3 × 2) (6)

8.2.2 If no data back-up has been made, it is essential that the owner of a computer and a technician assigned to troubleshoot a computer both sign a liability release form.

Which aspects should a liability release form cover? (3)

8.3 Name any TWO basic guidelines to follow when identifying a problem during a troubleshooting process. (2)

[23]

QUESTION 9

9.1 An IT support contract is an agreement between two parties in which one party will provide IT or information technology services in exchange for payment. Contracting IT support means that one will be hiring an outside service to ensure the technological aspects of your business continue to run without mishaps. An example of such support contract is a service level agreement (SLA).

9.1.1 Discuss THREE types of service level agreements. (3 × 2) (6)

9.1.2 Name FOUR support request channels that clients can use to request support from the IT help desk. (4)

9.1.3 Define *expert help*. (1)

9.2 Virtual printing does not send a print job to a printer within your local network. Instead, the print software either sends the job to a file or transmits the information to a remote destination in the cloud for printing.

List FIVE typical methods for sending a print job to file. (5)

[16]

QUESTION 10

10.1 List SIX features of proper dispatch procedure of a computer. (6)



10.2 Describe the features of the following input devices.

10.2.1 Webcam

10.2.2 Microphone

10.2.3 Wireless/Cordless mouse

(3 × 2) (6)
[12]



TOTAL SECTION B: 120
GRAND TOTAL: 150

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