higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

COMPUTER HARDWARE AND SOFTWARE
NQF LEVEL 3

(10041013)

7 November 2018 (X-Paper)
09:00–12:00

This question paper consists of 9 pages.

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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. Use black or blue ink only.
5. Rule off across the page after each completed question.
6. Start each section on a NEW page.
7. Write neatly and legibly.

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SECTION A

QUESTION 1

Choose a word(s) from COLUMN A that matches a description in COLUMN B. Write only the letter (A–L) next to question number (1.1–1.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.1	Hub	A	moving from one website to another
1.2	Resident software	B	gathering separate sheets of a multipage document
1.3	Thermal transfer	C	the central controlling node
1.4	Collating	D	this means an exact reproduction or copy of something
1.5	Surfing	E	scanning devices are frequently used to input and record a document into the computer's storage unit
1.6	Network topology	F	it usually involves creating or manipulating detailed drawing designs, and tracing pictures
1.7	Non-volatile memory	G	the set of permanently installed instructions that tell the hardware how to function
1.8	Emerging system	H	it is a newer process that transfers heat-sensitive ink to paper
1.9	Computer-aided design (CAD)	I	it increases storage capacity by reducing the amount of space required to store data and programs
1.10	Optical character recognition	J	an equipment arrangement or configuration
		K	new computer systems that are developing as a result of improved technology
		L	it is permanent and it can only be read, it cannot be changed

(10 × 21 **[10]**

QUESTION 2

Indicate whether the following statements are TRUE or FALSE. Choose the correct answer and write only 'True' or 'False' next to the question number (2.1–2.10) in the ANSWER BOOK.

2.1 Hackers and crackers are notorious for breaching computer security, creating and distributing malicious code.

2.2 Temporary memory is storage that is lost when a machine is turned off.

2.3 A digitiser cannot be used to input images and graphics into a computer.

2.4 A clustered or shared system does not depend on equipment that several operators may use in a network.

2.5 A USB flash drive is an example of internal storage.

2.6 The main goal of integrated software is to link or interface applications to enable the user to access multiple applications within an all-in-one software program.

2.7 In a ring network, a central switching device plays the role of a telephone operator.

2.8 American Standard Code for Information Interchange (ASCII) was devised for data communications exchange.

2.9 An instruction set is not part of the computer architecture.

2.10 Sanity testing is a very brief run-through of the functionality of a computer system to ensure that the system works as expected.

(10 × 1) **[10]**

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QUESTION 3

Various possible options are given as answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (3.1–3.10) in the ANSWER BOOK.

3.1 A computer's ability to run more that one application at a time:

A Networking
B Multitasking
C Booting
D Hibernating

3.2 Characters are sent one at a time at uneven intervals rather than in a steady stream:

A Analogue wave
B Asynchronous transmission
C Digital signals
D Synchronous transmission

3.3 It can be used as an input device:

A Touch-sensitive screen
B Voice mail
C Address line
D Subject line

3.4 A system for computer communication over long distances is called a …

A local area network (LAN).
B Personal area network (PAN)
C value-added network (VAN).
D wide area network (WAN).

3.5 Casing, either metal or plastic, that runs along the skirting or up walls, which is designed to hide cables from view:

A Compacting
B Trunking
C Tunnelling
D Pipelining

3.6 An electrical transformer that regulates the electricity supply to the computer:

A Uninterruptible power supply (UPS)
B Electrostatic discharge (ESD)
C Power supply unit (PSU)
D Universal Serial Bus (USB)

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3.7 Permanent storage used to preserve software data and programs:

A Internal storage
B Volatile storage
C Non-volatile storage
D Wireless storage

3.8 One long beep before the system shuts down indicates …

A a motherboard faulty.
B that the system working fine.
C a CMOS setting error.
D a missing, faulty or incorrectly installed CPU.

3.9 An area in the processor reserved for holding transient data is called the …

A cache.
B disk drive.
C register.
D holder.

3.10 The process of testing components of a system before they are placed in service:

A Sanity testing
B Black-box testing
C Load testing
D Burn-in testing

(10 × 1) **[10]**

TOTAL SECTION A: 30

SECTION B

QUESTION 4

4.1 What is the difference between the following terms:

4.1.1 Processor registers

4.1.2 Memory addresses

(2 × 2) (4)

4.2 Describe the following computer components:

4.2.1 Hardware

4.2.2 Software

4.2.3 Firmware

(3 × 2) (6)
[10]

QUESTION 5

5.1 Briefly explain the TWO functions of a parity bit. (2 × 2) (4)

5.2 Differentiate between *batch processing* and *interactive processing*. (3 × 2) (6)

5.3 Explain the difference between *data* and *information*. (2 × 2) (4)

5.4 Define the following THREE terms as they relate to computer memory and processors:

5.4.1 Bit

5.4.2 Byte

5.4.3 Word length

(3 × 2) (6)
[20]

QUESTION 6

6.1 Identify any FIVE documentation requirements in the dispatch procedure. (5)

6.2 You need to design a computer system. Once the specification plan is clear, you need to decide on the feasibility of the system.

Name any FIVE aspects to consider. (5)
[10]

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QUESTION 7

7.1 List SEVEN reasons that may lead to an unsuccessful software installation. (7)

7.2 Describe the following FIVE software types:

7.2.1 Diagnostic programs

7.2.2 Antivirus programs

7.2.3 Uninstall programs

7.2.4 Backup programs

7.2.5 File-compression programs

(5 × 2) (10)
[17]

QUESTION 8

8.1 Discuss THREE testing procedures that are used to ensure that the installation of software was completed successfully. (3 × 2) (6)

8.2 When testing an IT system, a testing plan should be prepared according to the system requirements specifications that the system is expected to meet but not limited to.

List SEVEN items that are included in the plan. (7)
[13]

QUESTION 9

9.1 Discuss any SEVEN electrostatic discharge (ESD) precautions to reduce the risk of electrical shocks. (7)

9.2 State EIGHT features of an ideal environment for computer assembly. (8)
[15]

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QUESTION 10

10.1 List NINE items which are included in a list of what a technician needs to fix a technical computer problem, in order to write a report for the user. (9)

10.2 Explain SIX communication techniques used by technicians to assure users that their problem will be resolved. (6)

10.3 As a college technician, a user reports no sound from the speaker attached to the PC.

Explain how you would troubleshoot the problem. (8)
[23]

QUESTION 11

11.1 Differentiate between *evidence of integrity* and *warranty*. (4)

11.2 Maintenance must be done on the computer systems of the Department of Education with minimum disruption of users.

State EIGHT factors to consider when the maintenance is executed. (8)
[12]

TOTAL SECTION B: 120
GRAND TOTAL: 150

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