higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

COMPUTER HARDWARE AND SOFTWARE
NQF LEVEL 3

(10041013)

10 December 2020 (Y-paper)
13:00–16:00

This question paper consists of 9 pages.

477Q1N2010

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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. Write neatly and legibly.

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SECTION A

QUESTION 1

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

COLUMN A		COLUMN B	
1.1	Windows 7, Linux, Ubuntu and macOS are known as …	A	ESD
1.2	Node that shares resources available from other nodes	B	work stations
1.3	Isolation test includes sanity testing, unit testing and …	C	CPU
1.4	Static charge that is usually generated through friction between two materials	D	troubleshooting
1.5	Third parties include your manager, suppliers and …	E	smoke testing
1.6	Several small computers or peripheral devices are linked to this central unit	F	RAM
1.7	Well-equipped contact centre will have …	G	motherboard
1.8	Beep codes are signals sent by I/O devices to the …	H	milestones
1.9	Process of identifying and defining a problem so you can solve it	I	manufacturers
1.10	Points at which you can measure your progress	J	operating systems
		K	server
		L	cable testing
		M	satellite
		N	star topology

(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 (2.1–2.10) in the ANSWER BOOK.

2.1 An output device refers to a device a that allows data to be displayed back to the user.

2.2 A burn-in test fixes faulty component.

2.3 AutoRun does not start the installation process without the user actions.

2.4 Diagnostic software is only for emergencies.

2.5 The process of testing is an investigation of the system.

2.6 Manufacturers should never be contacted when troubleshooting.

2.7 Beep codes are caused by expired operating systems.

2.8 Support staff is an information source.

2.9 A check list is only used by management to check on your progress.

2.10 Software faults may be caused by software that is out of date.

(10 × 1) **[10]**

QUESTION 3

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 (3.1–3.10) in the ANSWER BOOK.

3.1 RISC means …

A regular instruction set computer.
B reduced instruction set computer.
C to take a chance when driving a car.
D reduced information set computer.

3.2 … is an application software.

A Windows 8.1
B Firefox
C VLC
D Android

3.3 … is a value relevant to RAM.

A Core i3 2GHz
B 1 920 x 1 080 pixels
C 4 GB
D XYZ-123

3.4 UPS stands for …

A uninterruptible power supply.
B unity protective server.
C unified page surge.
D used power switch.

3.5 … is NOT a methodology.

A Agile
B Waterfall
C V-shaped
D V-model

3.6 Warranty means …

A limitations of the device.
B a promise by the manufacturer to repair or replace.
C functions that the device can perform.
D the device is feasible.

3.7 What is the meaning of continuous beeps?

A Display adaptor error
B Power supply, motherboard or keyboard
C Technical computer problems
D Random access memory

3.8 When a user calls in for support, what actions should you take?

A Record enough information about the problem, so you can start investigating.
B Avoid giving a timeframe for a response so you don't bind your company to any action.
C Assign a priority level to the problem.
D Indicate the problem in the logbook.

3.9 You must record the steps taken to solve the problem …

A so that your manager knows you are doing your job.
B so that there is record of what worked and what did not work.
C to refer the problem to expert support staff.
D so that you have information about the problem to share with the user.

3.10 When a user receives the repaired computer, you should …

A keep the repairs done a secret.
B give the person full information about the actions taken to repair the computer.
C not offer a warranty unless you think there might still be a problem.
D use technical language and acronyms.

(10 × 1) **[10]**

TOTAL SECTION A: 30

SECTION B

QUESTION 4

4.1

What is Virtualisation?

Virtualisation is defined as the abstraction of objects (things), creating a virtual (rather than actual) version of objects such as a server or storage device.

An example is when you partition a hard drive into two partitions, say C and D, you create virtual drives but the physical hard drive has not changed.

OR

Virtualisation is a technology that runs multiple same or different operating systems which are isolated from one another, for example it runs both Windows and Linux on the same machine.

4.1.1 What are the benefits of running a virtual machine? (4)

4.1.2 State at least THREE weak points of virtual machines. (3)

4.2 State FIVE characteristics of modern mainframe computers. (5)
[12]

QUESTION 5

5.1



FIGURE 1

5.1.1 Name the computer components shown in FIGURE 1. (1)

5.1.2 State FOUR ways in which the components shown in FIGURE 1 achieve data transfer. (4)

5.2 Tabulate THREE differences between *primary memory* and *secondary memory*. (2 × 3) (6)

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5.3 State whether the following activities are Application Software Customisation or System Software Customisation by writing only 'Application' or 'System' next to the question number in the ANSWER BOOK.

5.3.1 Setting the mouse for left-handed or right-handed operation

5.3.2 Security settings

5.3.3 Setting for disabled people, e.g. Sticky Keys, voice recognition or audio prompts

5.3.4 Multi-user options

5.3.5 Automatic update options

5.3.6 Setting date and time options

5.3.7 Setting currency and number formats

5.3.8 Menu items to be displayed in a particular manner or language

(8 × 1) (8)

5.4 Planning minimises errors during a system or application installation and enables a quicker installation or upgrade. Planning information helps to integrate the system much easier, plan power and environmental needs and prepare for any unique configurations you may need to handle.

5.4.1 State FOUR factors to consider when planning a software installation. (4)

5.4.2 Define the term *destination folder*. (2)

[25]

QUESTION 6

6.1 USB stands for universal serial bus. This is an industry standard computer bus developed in the mid-1990s and replaced some ports that were used, for instance the PS/2 ports for a mouse and a keyboard. After the USB was developed, it became the standard for connecting most computer peripheral devices.

Name FIVE computer peripheral devices that connect to a computer via a USB port. (5 × 2) (10)

6.2 After a successful peripheral installation, a test procedure is done to satisfy yourself and the user that everything works correctly.

6.2.1 State THREE things that you will do to test that the PC peripherals were installed correctly. (3)

6.2.2 What will you explain to the user for him/her to understand the device and installation and be able to use it correctly? (5)

[18]

QUESTION 7

7.1 When testing IT systems against given specifications, the type of test selected will depend on what has to be tested, e.g. a hardware system, a software system or network hardware and software.

7.1.1 State SIX factors that may affect the choice of the test procedures. (6)

7.1.2 Name and discuss THREE types of isolation tests. (9)

[15]

QUESTION 8

8.1 What is meant by *preventative maintenance*? (1)

8.2 Discuss how the use of an uninterruptible power supply prevents or reduces the chances of a computer malfunction. (5)

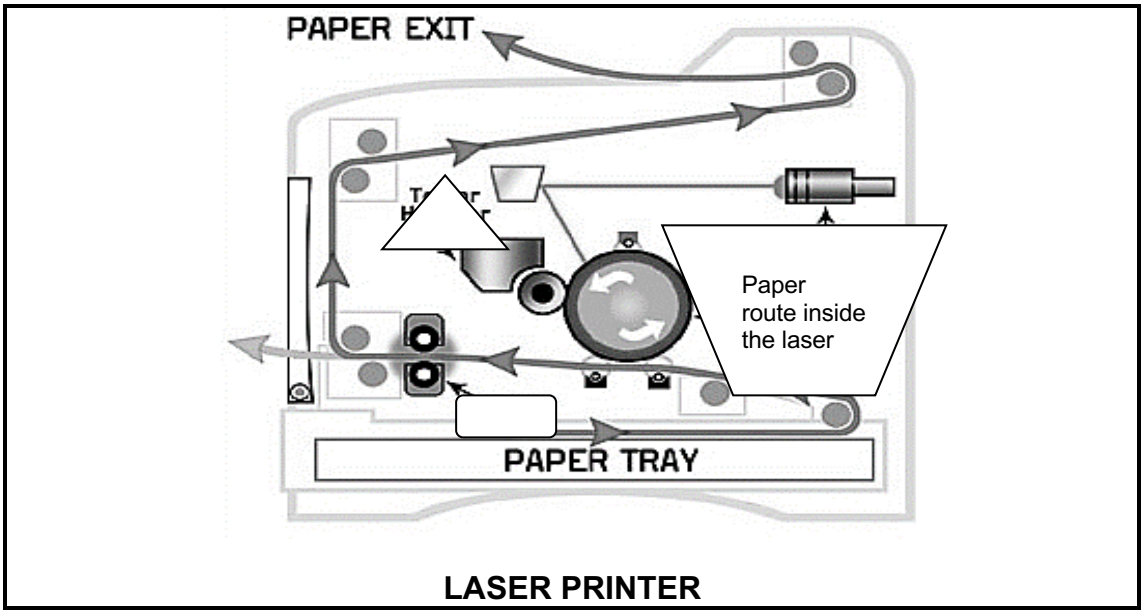
8.3 Discuss the measures you would take to minimise the need for computer maintenance. (5 × 2) (10)

8.4 What does the acronym ESD stand for? (1)

[17]

QUESTION 9

9.1



LASER PRINTER

FIGURE 2

Name EIGHT main parts of a laser printer. (8)

9.2



FIGURE 3

Discuss different ways to prevent fragmented files inside the component shown in FIGURE 3. (5)

9.3 Name FIVE input devices used with portable computers. (5)

9.4 Copy the following table in the ANSWER BOOK and complete it by comparing Ultrabooks and Chromebooks:

FEATURE	ULTRABOOKS	CHROMEBOOKS
Operating system		
Processing capability		
Cost effectiveness		

(6)
[24]

QUESTION 10

10.1 When resolving computer users' problems, the feasibility and effectiveness of the solution depend on available resources. Operational and technical feasibility checks play a huge role in determining solution feasibility.

Write down FIVE essential questions that should be asked when testing the operational feasibility of a system. (5)

10.2 State FOUR steps involved in solving problems. (4)
[9]

TOTAL SECTION B: 120
GRAND TOTAL: 150

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