higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

INTRODUCTION TO INFORMATION SYSTEMS
NQF LEVEL 2

(10041002)

2 March 2020 (Y-paper)
13:00–16:00

This question paper consists of 11 pages.

163Q1S2002

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TIME: 3 HOURS
MARKS: 200

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 blue or black pen.
6. Write neatly and legibly.

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SECTION A

QUESTION 1

1.1 Various options are given as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) next to the question number (1.1.1–1.1.10) in the ANSWER BOOK.

1.1.1 Factors that help managers make meaningful decisions include …

A critical thinking and imagination.
B patience and assertiveness.
C willpower and financial skills.
D determination and creativity.

1.1.2 The aim of management is to help make people work more …

A poorly.
B effectively.
C speedily.
D happily.

1.1.3 The fundamental role of an information system is to …

A keep track of employees.
B back-up information.
C support decision-making.
D store passwords.

1.1.4 Antivirus software can only protect the system if it has the latest …

A internet plug-ins.
B operating system.
C hardware.
D virus definitions.

1.1.5 A … can handle many user inputs at once; this assists managers in collecting large volumes of data.

A transaction processing system
B financial information system
C manufacturing system
D marketing system

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1.1.6 Computers that are built for a specific task are known as … computers.

A general-purpose
B special-purpose
C pervasive
D convergence

1.1.7 Magnetic disks are magnetised to store a … and demagnetised to store a 0.

A 2
B -2
C 1
D -1

1.1.8 A … scanner can be used to capture data during a stock take.

A text
B flatbed
C portable
D photo

1.1.9 A … printer is used for credit card machines as well as ticket machines.

A laser
B inkjet
C drum
D thermal

1.1.10 A … is a machine that has a screen and keyboard allowing the user to enter and view information on it.

A terminal
B sandbox
C database
D graphical user interface

(10 × 1) **[10]**

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1.2 Complete the following sentences by using the words provided in the list below. Write only the answer next to the question number (1.2.1–1.2.10) in the ANSWER BOOK

plotters; interactive; antivirus; laptop; flash; optical; support; encrypted; accurate; mobile

1.2.1 An organisation is made up of core functions and … functions.

1.2.2 An information system should be able to provide … information to the user.

1.2.3 … technology allows employees to be productive outside of the workplace allowing for easy communication between colleagues.

1.2.4 A firewall and … software will assist in keeping viruses off the computer system.

1.2.5 Electronic messages should be … and not sent in plain text, which can be easily intercepted and read.

1.2.6 … processing is where the user interacts with the system until the required output is reached.

1.2.7 A/An … disc uses laser technology to write data to the disc.

1.2.8 … keyboards are a simpler version of the typical QWERTY keyboard.

1.2.9 … storage devices can be used with digital still cameras as well as mp3 players.

1.2.10 Many … are slower than conventional printers since each line is drawn separately.

(10 × 1) **[10]**

1.3 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'True' or 'False' next to the question number (1.3.1–1.3.10) in the ANSWER BOOK.

1.3.1 A good manager is self-motivated.

1.3.2 Operational managers make tactical decisions on a daily basis.

1.3.3 Information technology refers to the use of desktop PCs in the workplace.

1.3.4 Risk is the possibility of a vulnerability being exploited.

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1.3.5 Logic bombs are not always malicious.

1.3.6 A server is a powerful machine that can be used for computer processing while travelling.

1.3.7 Solid state drives access data faster than a hard disk therefore they speed up the computer.

1.3.8 A hard disk can become fragmented over time.

1.3.9 Lossless compression removes redundant data to compress a file.

1.3.10 CTRL + ALT + DEL are special keys which can be used to bring up the task manager.

(10 × 1) **[10]**

1.4 Choose an item or a word from COLUMN B that matches a description in COLUMN A. Write only the letter (A–J) next to the question number (1.4.1–1.4.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.4.1	An approach used to gather information on what type of information is needed by employees	A	system principles
1.4.2	A fundamental role of an information system	B	intellectual property
1.4.3	Building an information system around vital concepts that determine its end use	C	electronic computer
1.4.4	An idea or concept that belongs to a particular person	D	input control
1.4.5	An area where computers affect management in planning	E	video input device
1.4.6	A digital machine that can be used for computing or connectivity	F	lossy compression
1.4.7	A mechanism to minimise errors when capturing data	G	communication
1.4.8	Any device that sends video signal as input to a computer	H	planning and controlling
1.4.9	A compression technique known as irreversible compression	I	input device
1.4.10	A device used to enter data into the computer	J	needs analysis

(10 × 1) **[10]**

1.5 Give ONE word or words for each of the following acronyms. Write only the word or words next to the question number (1.5.1–1.5.10) in the ANSWER BOOK.

1.5.1 MD

1.5.2 MIS

1.5.3 H/W

1.5.4 IT

1.5.5 ICT

1.5.6 CPU

1.5.7 USB

1.5.8 POS

1.5.9 RAID

1.5.10 HDD

(10 × 1) **[10]**

TOTAL SECTION A: 50

SECTION B

QUESTION 2

2.1 Create an organisational chart showing the interrelated elements that make up your TVET campus.
Use the following headings:

- Campus manager
- Senior lecturers (x2)
- Lecturing staff (x3)
- Administration (10)

2.2 Identify THREE functions of a manager. (3 × 2) (6)

2.3 Describe how experience would assist the manager in making better decisions. (2 × 2) (4)

2.4 Assess why it is important to evaluate the outcome of a solution after implementing it. (2)

[22]

QUESTION 3

3.1 Using an example, illustrate the relationship between data, information and knowledge. (8)

3.2 Explain the main purpose of an information system. (2 × 2) (4)

3.3 List THREE roles of an information system within a business. (3 × 2) (6)

3.4 Explain how the knowledge base of the company can assist with marketing to its customers. (2 × 2) (4)

3.5 Name the most vital element of any information system. (1)

[23]

QUESTION 4

4.1 Tabulate TWO differences between a *centralised* and *decentralised* information system. (2 × 2) (4)

4.2 You are an information security analyst for a leading software company. Three staff members have notified you about e-mails that they have received which require them to click on a link to change their login details to the company's main server. These attempts have been identified as phishing scams.

You are required to put together a security plan to protect the company from threats.

4.2.1 Suggest a type of access control to prevent unauthorised users from accessing the computer systems. (2)

4.2.2 Recommend TWO additional control mechanisms that could be used to manage online attacks. (2 × 2) (4)

4.2.3 Propose TWO precautions to take in order to avoid becoming a victim of phishing scams. (2 × 2) (4)

4.3 Name TWO benefits of computer processing. (2 × 2) (4)

4.4 Name ONE type of computer virus or malware. (2)

4.5 Identify THREE ways in which computer viruses can be spread to a device that does not have internet access. (3 × 2) (6)

4.6 Suggest TWO ways to combat software piracy at your college. (2 × 2) (4)

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QUESTION 5

5.1 Describe TWO characteristics of an abacus. (2 × 2) (4)

5.2 List THREE electronic computing devices. (3 × 2) (6)

5.3 Compare a server and mainframe computer.

5.3.1 State which one of the two systems you would recommend for use in a small to medium-sized business.

5.3.2 State the reason for your answer to QUESTION 5.3.1 above. (2 × 2) (4)

5.4 Describe what an end user is. (2)

5.5 Explain the concept of multi-core processing microchips. (2 × 2) (4)

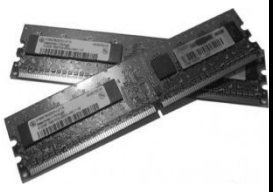
5.6 Identify the category of peripheral device that are used to store data. (2)

5.7 Name a device that can be used to store data which is larger than 500 GB. (1)

[23]

QUESTION 6

6.1

COMPONENT A	COMPONENT B	COMPONENT C	COMPONENT D
			

Identify the components labelled A to D above. (4 × 2) (8)

6.2 Describe the fetch/execute cycle in short. (4)

6.3 Convert the binary number 00000011 to a decimal number. (2)

6.4 The computer at the local library takes long to open programs. It sometimes freezes when more than one program is open at the same time. There are no viruses on the system.

Suggest a way to remedy the problem mentioned in QUESTION 6.3 above so that multiple programs can be open concurrently. (2)

6.5 Mrs Mbatha will lecture to fifty students in the hall. She will be playing a video during the lecture.

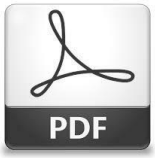
6.5.1 Suggest a device that she can use with her computer to ensure that all the students hear the audio clearly.

6.5.2 Suggest a device that she can use with her computer to ensure that all the students see the video clearly.

(2 × 2) (4)

6.6 Tabulate TWO differences between a *hand-held scanner* and a *keyboard for data entry.* (2 × 4) (8)

6.7

FILE A	FILE B	FILE C
		

Suggest an application that can be used to open each of the files in QUESTION 6.6 above. (3 × 2) (6)

6.8 Describe TWO benefits of using a dedicated graphics card. (2 × 2) (4)

6.9 Astika uses a 10" tablet to play videos. Although the audio is clear, the video file she is trying to play is scrambled. The following message appears on the screen: 'video file format not supported'.

Propose a solution which will enable the video to play clearly. (2)

6.10 Describe how a dumb terminal works. (2 × 2) (4)

6.11

DEVICE A	DEVICE B	DEVICE C
		

Identify the digital camera devices labelled A– C above. (3 × 2) (6)

6.12 State ONE advantage of a multifunction printer. (2)

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TOTAL SECTION B: 150
GRAND TOTAL: 200

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