higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

INTRODUCTION TO INFORMATION SYSTEMS
NQF LEVEL 2

(10041002)

1 March 2018 (X-Paper)
09:00–12:00

This question paper consists of 12 pages.

NCV

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. 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 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 Managers need to …

A finish all tasks before leaving work.
B be laid back.
C be sensitive to the needs of the organisation.
D consult employees on all matters.

1.1.2 A/An … is an integrated system which uses information to help support managers in decision making.

A information hub
B information system
C database
D repository

1.1.3 The coding and decoding of a message from sender to recipient is known as …

A phishing.
B encryption.
C codec.
D signature.

1.1.4 … is the possibility that a company may have lower than expected profits or it may experience a loss rather than making a profit.

A Deviation
B Control
C Change
D Risk

1.1.5 Computers can only manipulate data that is stored in the … memory.

A read-only
B write-only
C main
D back-up

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1.1.6 Devices used to enter data into the computer is referred to as …

A entry devices.
B installations.
C output hardware.
D input hardware.

1.1.7 Softcopy devices are classified as … devices.

A output
B input
C throughput
D removable

1.1.8 A … can convert a digital signal from the computer into audible sound waves.

A speaker
B microphone
C light-emitting diode
D control unit

1.1.9 2 bytes make up … bits.

A 16
B 8
C 4
D 2

1.1.10 The CPU cannot directly access … storage.

A back-up
B primary
C random access memory
D secondary

(10 × 1) (10)

1.2 Choose ONE word/term for each of the following descriptions from the list below. Write only the word/term next to the question number (1.2.1–1.2.10) in the ANSWER BOOK.

virus; direct-entry; information; magnetic; file; design; megahertz; cursor; manager; oled

1.2.1 The … should develop an organisational structure for his/her department to ensure everyone knows who to report to.

1.2.2 When designing an information system, there are various … factors to keep in mind.

1.2.3 Through development in … technology, employees are able to work from outside the workplace and are no longer limited to just an office.

1.2.4 A … is a piece of code that is capable of copying itself and typically has a detrimental effect, such as corrupting a system or destroying data.

1.2.5 Processor speed is measured in units called …

1.2.6 … hardware captures data without keystrokes.

1.2.7 … control keys have an arrow head printed on them, pointing in the direction the key will move.

1.2.8 …uses 'organic' materials like carbon to create light when supplied directly by an electric current.

1.2.9 Any storage medium that utilises magnetic patterns to represent information is considered … media.

1.2.10 A … is a collection of logically-related records.

(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 An organisation is a group of people working together, using resources to achieve their goal.

1.3.2 Knowledge is used when making decisions based on information we already have.

1.3.3 Computers limit the amount of control users have on the data being processed.

1.3.4 Norton Antivirus offers freeware and paid options.

1.3.5 A stored program is a list of instructions stored in electronic memory.

1.3.6 Function keys are used to communicate specific functions to the BIOS.

1.3.7 A laser pointer can be used to control the cursor on the screen of a computer.

1.3.8 An LED uses the same technology as an LCD TV, but instead of being lit up by a fluorescent bulb from behind, it is lit by a collection of LEDs (light-emitting diodes).

1.3.9 A fixed-disk drive will only work if it is plugged into a USB 3.0 port.

1.3.10 When disks are set in a RAID configuration, the system reads it as one big drive.

(10 × 1) (10)

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1.4 Choose an/a item/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	A manager's ability to make decisions when there are no facts or information for on which to base his decision	A	experience
1.4.2	A system that helps a company make adequate use of its data, reduces workload and assists with compliance with various mandatory regulations	B	definition updates
1.4.3	The process of installing additional software to an antivirus program in order to protect against new viruses	C	eniac
1.4.4	An access control policy determined by the system, not the owner	D	softcopy
1.4.5	A computer built in 1946 during world war 2 to calculate movement and strategy for the military	E	magnetic tape
1.4.6	An electromechanical device that is made up of electrical and mechanical parts	F	mandatory access control
1.4.7	A sound recording device used to record speech for later playback	G	dictaphone
1.4.8	Output that is displayed on the screen	H	dot-matrix
1.4.9	A noisy printer mostly used for printing invoices	I	calculator
1.4.10	An archiving storage medium that is made up of a strip of plastic coated with iron oxide	J	information system

(10 × 1) (10)

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

1.5.1 SMART

1.5.2 IT

1.5.3 H/W

1.5.4 MIS

1.5.5 ALU

1.5.6 CU

1.5.7 AGP

1.5.8 NTSC

1.5.9 CAD

1.5.10 ROM

(10 × 1) (10)
[50]

TOTAL SECTION A: 50

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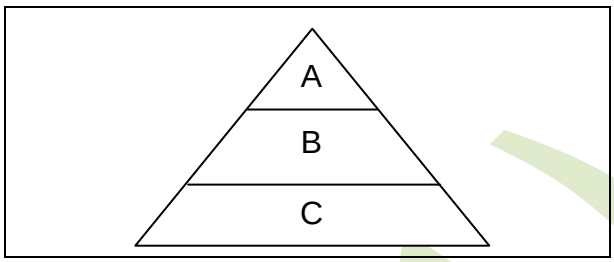
SECTION B

QUESTION 2

2.1 Discuss the importance of controlling as a function of management. (4)

2.2



THREE LEVELS OF MANAGEMENT

Name the THREE levels of management labelled A, B and C. (3 × 2) (6)

2.3 State TWO factors that contribute to a manager making meaningful decisions. (2 × 2) (4)

2.4 Describe the first step a manager should take when trying to solve a problem. (1)

[15]

QUESTION 3

ASTI-M is a new IT company. Before opening their doors they requested you, as a consultant, to explain some of the benefits of implementing an information system to help manage the organisation.

3.1 Make TWO recommendations in favour of the implementation of an information system for the company. (2 × 2) (4)

3.2 Name FIVE basic elements that you think ASTI-M should include in their information system for it to function properly. (5)

3.3 Explain each of the elements you named in QUESTION 3.2. (5)

3.4 Give ONE example of the type of data this IT company would store on their database. (1)

[15]

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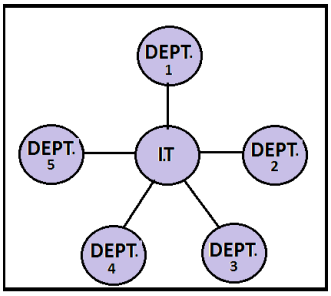
QUESTION 4

4.1



CENTRALISED INFORMATION SYSTEM

4.1.1 Draw and label the configuration of a decentralised information system. (6)

4.1.2 Which TWO problems could arise from implementing a centralised information system? (2 × 2) (4)

4.2

MASSIVE RANSOMWARE CYBER-ATTACK HITS NEARLY 100 COUNTRIES AROUND THE WORLD

A ransomware cyber-attack that may have originated from the theft of cyber weapons linked to the US government, has hobbled hospitals in England and spread to countries across the world.

Security researchers with Kaspersky Lab have recorded more than 45,000 attacks in 99 countries, including the UK, Russia, Ukraine, India, China, Italy, and Egypt. In Spain, major companies including telecommunications firm Telefónica were infected.

A Los Angeles hospital paid $17,000 in bitcoin to ransomware hackers last year, after a cyber-attack locked doctors and nurses out of their computer system for days.

[Adapted from: *www.theguardian.com/technology/2017/may/12/global-cyber-attack-ransom-ware-nsa-uk-nhs*]

4.2.1 Name TWO controls that are needed to prevent unauthorised users gaining access to a computer system within an organisation.

4.2.2 State TWO ways to safeguard an organisation's computer system against cyber-attacks.

(2 × 4) (8)

4.3 Apart from cyber-attacks the network is vulnerable to internal threats such as computer viruses. These viruses can spread without the knowledge of the computer user.

4.3.1 State TWO ways in which viruses can spread.

4.3.2 Give TWO solutions to prevent computer viruses.

4.3.3 Name any TWO types of computer viruses that can affect the computer.

(3 × 4) (12)
[30]

QUESTION 5

5.1 Name any ONE mechanical calculating tool that was used before the invention of calculators. (2)

5.2 Data will go through four stages; input, processing, output and storage.

Briefly describe in the correct order what happens to data at each of these four stages. (4 × 2) (8)

5.3 Compare any TWO differences between a *portable computer* and a *non-portable computer.* (2 × 2) (4)

5.4

	
TYPE A	**TYPE B**

Name and state the use for the computer labelled:

5.4.1 Type A

5.4.2 Type B

(2 × 3) (6)

5.5 Give a brief description of the role the control unit plays in processing. (2)
[22]

QUESTION 6

6.1

			
JOYSTICK	**FLATBED SCANNER**	**CARD READER**	**BARCODE SCANNER**

State the use of each of the input devices shown above. (4 × 2) (8)

6.2 State which key or combination of keys would produce the following:

6.2.1 The @-symbol used in e-mails

6.2.2 To perform a spellcheck in Microsoft Word

6.2.3 To perform a search within a folder

6.2.4 To change between upper case and lower case input

(4 × 2) (8)

6.3 State the type of sensor that could be used to monitor the temperature of the microprocessor. (3)

6.4 Give a solution to limit the number of error inputs into a computer made by a user. (2)

6.5 Discuss the necessity for input control in an information system. (2)

[23]

QUESTION 7

7.1 Differentiate between *softcopy* and *hardcopy* output devices and give an example of each. (8)

7.2

			
DEVICE A	**DEVICE B**	**DEVICE C**	**DEVICE D**

Identify the type of output device depicted by devices A, B, C and D above. (4)

7.3 As a consultant at ASTI-M, recommend a device that could be used to print large banners for the company. (2)

7.4 State THREE possible problems (disadvantages) that the company could face with the device recommended in QUESTION 7.3. (3 × 2) (6)

7.5 Recommend an output device that could be used for the output of sound in the media room at ASTI-M. (2)

[22]

QUESTION 8

8.1 State TWO properties of primary storage. (2 × 2) (4)

8.2 State what makes secondary storage different from primary storage. (2 × 2) (4)

8.3 State THREE practical uses of portable storage media. (3 × 2) (6)

8.4 Name a type of optical disc that would be most efficient to package and distribute software. (2)

8.5 Advise the staff at ASTI-M on how to care for an optical disk. (1)

8.6 Hard drives are expensive if masses of information have to be stored.

Recommend a cheaper alternative storage medium for large computers. (2)

8.7 Describe TWO advantages of compressing files. (4)

[23]

TOTAL SECTION B: 150
GRAND TOTAL: 200

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