higher education & training

Department:
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INTRODUCTION TO INFORMATION SYSTEMS
NQF LEVEL 2

(10041002)

12 November 2018 (X-Paper)
09:00–12:00

This question paper consists of 16 pages.

NCV

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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. 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 your answer book.

1.1.1 Top-level management are responsible for decisions such as …

A ensuring staff are on time at work.
B conducting a feasibility study on opening a new branch.
C making sure stock levels are topped up.
D setting daily targets.

1.1.2 The study or use of systems for storing, sending and retrieving information is known as …

A artificial intelligence
B decision support.
C information analysis.
D information technology.

1.1.3 The unauthorised copying of copyright software is referred to as …

A software copying.
B software duplication.
C software piracy.
D software manipulation.

1.1.4 Computers help management in a business to …

A plan and control decisions.
B write effective programs.
C keep in touch with their friends.
D do online shopping in their free time.

1.1.5 In 1890 Herman Hollerith used … cards for data processing. His concept was also used in a census for that year.

A electronic memory
B perforated
C magnetic
D media

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1.1.6 A/An … is a hand-held pointing device that detects two-dimensional motion relative to a surface.

A abacus
B terminal
C smart card
D mouse

1.1.7 A … becomes a versatile tool in the business environment when used with an appropriate program to facilitate the printing of the designs of things such as cars, ships and buildings.

A designer
B plotter
C modem
D terminal

1.1.8 Multifunction printers are beneficial to an organisation because they …

A are expensive.
B offer more than one function.
C are high in maintenance.
D can only perform one function at a time.

1.1.9 A … is a collection of data or information that has been given a reference name, understandable by a human.

A motherboard
B byte
C sector
D file

1.1.10 The central processing unit reads data directly from the…

A secondary storage.
B random access memory.
C read-only memory.
D input devices.

(10 × 1) (10)

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

scanned; definitions; delegate; DVD ;internet; raid; digital; information; LED; calculations; cathode; head; numbers;

1.2.1 Managers will … a task to an employee who can cope with it.

1.2.2 … is data which is organised for a specific purpose where the meaning of it is made known.

1.2.3 Infected files/folders should be … by a reliable antivirus program.

1.2.4 Antivirus programs need the latest virus … to protect against the latest viruses.

1.2.5 The central processing unit performs all … functions of the computer.

1.2.6 A/An … camera captures images in electronic form.

1.2.7 A/An … terminal helps people access the world-wide web.

1.2.8 A/An … screen is a flat panel display, which uses an array of diodes as pixels for a video display

1.2.9 An advantage of … is that it is configured to work as a single drive.

1.2.10 A hard disk drive has a metal disk inside called a platter. A … is used to record data to the platter.

(10 × 1) (10)

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

1.3.1 Managers should maintain discipline in following up on matters that arise.

1.3.2 One of the functions of an information system is to collect information.

1.3.3 A bot is an automated process that interacts with other network services which automate processes that would otherwise be done by humans.

1.3.4 A computer virus can transfer itself over a radio signal without the user transferring files, for example you connect to a Wi-Fi hotspot.

1.3.5 A computer will be able to function without any random access memory installed provided that there is sufficient read-only memory.

1.3.6 To ensure accuracy of data, users could be given fixed options to choose from a drop-down list.

1.3.7 Sensors can be used in the medical industry to pick up heartbeats or temperatures.

1.3.8 Flat-panel displays are used only in portable computers.

1.3.9 DVDs should be cleaned using a mild solvent such as paraffin.

1.3.10 Blu-ray discs offer a larger storage capacity than DVDs.

(10 × 1) (10)

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1.4 Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–D) next to the question number (1.4.1–1.4.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
1.4.1	Basic process required by information system that will ensure employees have data to use and manipulate	A	e-commerce
1.4.2	Is a series of steps, taken together, to achieve a desired result.	B	stored program
1.4.3	Online service where products can be advertised, bought and delivered	C	special purpose keys
1.4.4	Is a documented process with procedures on how to recover and protect the business IT infrastructure in the event of an unforeseen occurrence.	D	plasma screen
1.4.5	Set of instructions saved on computer memory	E	data collection
1.4.6	Numbering system using only 0s and 1s	F	binary
1.4.7	Characters which are accessed by using shift and the corresponding key, for example $	G	disaster recovery plan
1.4.8	Screen with gas between two glass sheets	H	elements of an information system
1.4.9	Information displayed as images/text on a screen	I	soft copy output
1.4.10	Type of printer that uses charged powder	J	floppy disk
		K	ink jet
		L	laser
		M	appointment plan
		N	numeric keypad
		O	SPAM
		P	procedure

(10 × 1) (10)

1.5 Write down each of the following acronyms in full. Write only the answer next to the question number (1.5.1 – 1.5.10) in the ANSWER BOOK.

1.5.1 HTML

1.5.2 DSS

1.5.3 MIS

1.5.4 HTTP

1.5.5 GUI

1.5.6 POS

1.5.7 ASCII

1.5.8 PDA

1.5.9 TFT

1.5.10 USB

(10 × 1) (10)

[50]

TOTAL SECTION A: 50

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SECTION B

QUESTION 2

2.1 Briefly explain the considerations of each element of a SWOT analysis. (4 × 2) (8)

2.2 List TWO examples of strategic decisions you would make as a top-level manager at the TOYOTA vehicle manufacturing plant in South Africa. (4)

2.3 Name the leadership style where the boss makes all the decisions. (2)

2.4 Name ONE characteristic of a good decision maker. (1)
[15]

QUESTION 3

3.1 Differentiate between *information* and *knowledge*. (2 × 1) (2)

3.2 Draw a diagram indicating the FIVE key elements necessary for the functioning of an information system. Include ONE purpose, function or role of each of the elements in your diagram. (2+(5 × 2) (12)

3.3 List THREE reasons why it is necessary to consider the possibility of implementing a different information system than the one designed. (3 × 1) (3)
[17]

QUESTION 4

4.1 TOYOTA, as referred to in QUESTION 2.2, needs to downsize by closing its only other branch to cut costs.

4.1.1 Recommend an organisational configuration which could be implemented so that all functions of the information system can take place locally. (2 × 1) (2)

4.1.2 State TWO advantages of the configuration recommended in QUESTION 4.1.1 above. (2 × 1) (2)

4.2 Evaluating information is one of three key areas in which computers can affect managers.

LIST the TWO other key areas. (4)

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4.3 Study the following image of a device, sometimes used as part of access control, and answer the questions.



FIGURE 1

Source (https://www.indiamart.com/proddetail/)

4.3.1 Identify the type of access control mechanism depicted as part of FIGURE 1 (1)

4.3.2 Name the term used to refer to the identification of a person based on his or her traits such as their retina, voice or face. (1)

4.3.3 List any TWO benefits of using the type of access control technology as depicted FIGURE 1 (2 × 1) (2)

4.4 Suggest TWO methods of physically protecting computer hardware from theft at the TOYOTA plant. (4)

4.5 Differentiate between THREE types of computer viruses. (3 × 2) (6)

4.6 The computer systems in the design department at TOYOTA are infected with viruses.

4.6.1 Propose a solution to disinfect the computers without deleting the infected files. (2)

4.6.2 Differentiate between *freeware* and *paid* antivirus programs. (4)

[28]

QUESTION 5

5.1 Study the following diagram and images of (component 1) and (component 2) below and answer the questions.

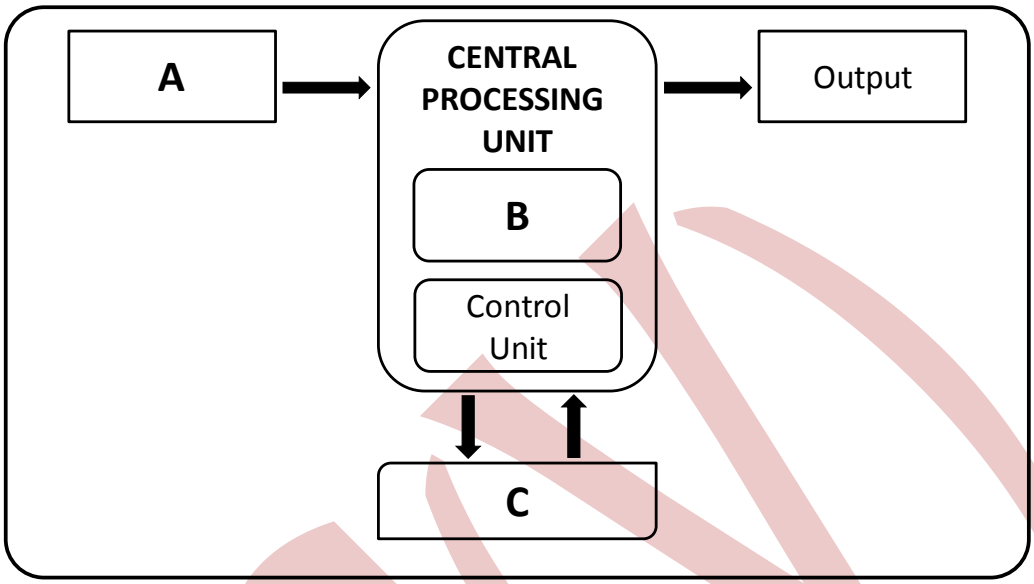

DIAGRAM 1



IMAGE (Component 1)

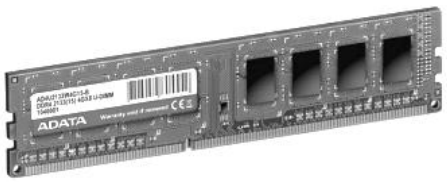

IMAGE (Component 2)

5.1.1 Identify the stage of computer processing labelled A in DIAGRAM 1. (1)

5.1.2 Name any hardware device that could be used to facilitate the operations associated to Label A (1)

5.1.3 Explain how the IMAGE of (Component 1) is related to DIAGRAM 1 (1)

5.1.4 Explain the process labelled OUTPUT. (2)

5.1.5 Identify the component of DIAGRAM 1 labelled B. (1)

5.1.6 Identify the component of IMAGE (Component 2) (1)

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5.1.7 Identify the component of DIAGRAM 1 labelled C. (1)

5.1.8 Explain the relationship between the OPERATIONS associated to the component labelled C and that of the component of IMAGE (Component 2) (1 × 2) (2)

5.1.9 State the function of the control unit in processing. (1 × 2) (2)

5.1.10 From the IMAGE of (Component 1) we can see that Intel is the manufacturer thereof.

State the name of any other manufacturer that also produces similar components. (1)

5.1.11 Study the following image



IMAGE (Component 3)

Source (https://uk.rs-online.com/web/p)

Explain the relationship between the image of (Component 3) and that of the image of (Component 1) (1 +1) (2)

5.2 Explain the concept *computer-mediated communication* with the use of an example. (2 +1) (3)

5.3 Differentiate between *DDR memory* and *SDRAM*. ((2 × 1) × 2) (4)

[22]

QUESTION 6

6.1 Study the image below and answer the questions.



FIGURE 2

Source (http://www.osayde.com/product/)

6.1.1 Identify the two objects visible in FIGURE 2 (2)

6.1.2 What medium is used to store information on one of the objects? (1)

6.1.3 Give a practical use for the device in the TOYOTA vehicle manufacturing plant. (1)

6.2 Study the image below and answer the questions.



FIGURE 3

Source (https://www.barcodesinc.com/news/?tag=upc)

6.2.1 Identify the device visible in FIGURE 3 (2)

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6.2.2 What medium is used to read the stripes type/based image as part of FIGURE 3 (1)

6.2.3 List TWO benefits of the device depicted in FIGURE 3 (2 × 1) (2)

6.2.4 Give a practical use for the device in the TOYOTA vehicle manufacturing plant. (1)

6.3 State the function of each of the keyboard keys:

6.3.1 F1 when used in on a desktop (1)

6.3.2 F3 when used on the desktop (1)

6.3.3 Shift + 0 when used in a word-processing program (1)

6.3.4 Down arrow when used in a spreadsheet program (1)

6.3.5 CTRL + C (1)

6.3.6 CTRL + V (1)

6.4 Distinguish between an *intelligent terminal* and a *dumb terminal*. (4)

6.5 Name the type of converter used to convert sound from analogue to digital format. (1)

6.6 Give a method to reduce the size of a sound file so that it takes up less space in storage. (2)

[23]

QUESTION 7

7.1 Read the following scenarion and answer the questions that follow.

Bongi is the general production manager at TOYOTA's assembly plant in DURBAN where various vehciles are mafucatured. Every day BONGI views a report on her tablet showing the details of the number of different types vehicles produced the previous day, the number of incidents and the expected number of vehicles to be produced for the current day. Some days Nkanyezi, the shopsteward receives a printed document from the admin personal that lists the birthdays of all the workers in his section for that day. He then visits each employee to congratulate him/her pesonally.

7.1.1 Differentiate between hard and softcopy output. Relate your answer to the scenario. (2 × 2) (4)

7.1.2 List TWO advantages of hard copy output. (2 × 1) (2)

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7.2 Name an output device which could be used to display data to a large group of people. (1)

7.3 Copy the table below to the ANSWER BOOK.

	LASER PRINTER	DOT-MATRIX PRINTER
STRENGTHS	1. 2.	1. 2.
WEAKNESSES	1. 2.	1. 2.

Tabulate TWO strengths and TWO weaknesses for each printer in the TABLE. (8)

7.4 At TOYOTA the leather for the seats and trimming are cut by hand. Getting the cuts perfect takes time and causes delays in getting the vehicle ready for the customer.

7.4.1 Name a device that will resolve the problem in QUESTION 7.4. (2)

7.4.2 State TWO benefits of using the device in QUESTION 7.4.1 (2)

7.5 Define the term: *3D Printing* (2)

7.6 Name TWO devices that can be used for sound output from a computer. (2 × 1) (2)

[23]

QUESTION 8

8.1 State the difference between *primary storage* and *secondary storage*. (2 × 2) (4)

8.2 How many Megabytes are there available in 2 Gigabytes of storage? (2)

8.3 Study the following diagram depicting a typical type of secondary storage medium and answer the questions that follow.

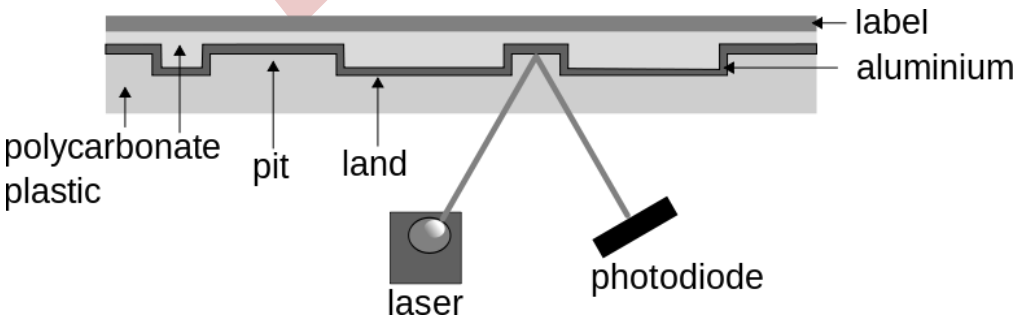


FIGURE 4

Source (https://commons.wikimedia.org/wiki/File:CPT)

8.3.1 Identify the top part (depicted as part of FIGURE 4) comprising of, the polycarbonate plastic layer, aluminium layer and printed label layer. (1)

8.3.2 Explain how data are read from the medium. (5 × 1) (5)

Read the following scenarion and answer the questions.

8.4 Human Resources at TOYOTA need to back-up their records off site. The team is using a cloud based drive to create the back up. File uploads are taking a long time as some of the files are large in size. Some HR staff request that the back-up process be stopped, others are suggesting files be compressed and backed up.

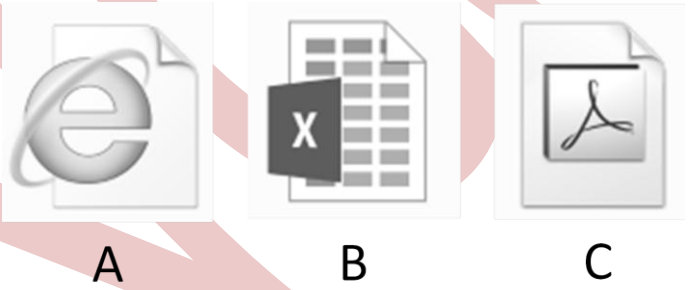
8.4.1 List TWO consequences that could occur if back-ups are not done on a regular basis. (2)

8.4.2 Recommend a program that can be used to compress the records for upload. (1)

8.4.3 Expand the acronym *RAID.* (1)

8.4.4 Briefly explain what RIAD entail. (3)

8.5 Study the following file type icons and answer the questions.



8.5.1 Which file icon type A, B or C is used to represent a file that typically stores for example sales data or class lists? (1)

8.5.2 Which file icon type A, B or C will have the extension **.pdf**? (1)

8.5.3 Which file icon type A, B or C will relate to the internet? (1)

[22]

TOTAL SECTION B: 150
GRAND TOTAL: 200

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