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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE COMPUTER PRINCIPLES N4

(6040034)

**20 April 2020 (X-paper)
09:00–12:00**

This question paper consists of 7 pages.

307Q1A2020

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
COMPUTER PRINCIPLES N4
TIME: 3 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer all the questions.
 2. Read all the questions carefully.
 3. Number the answers correctly according to the numbering system used in this question paper.
 4. Start each section on a new page
 - 5.. Write neatly and legibly.
-

QUESTION 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 (1.1–1.10) in the ANSWER BOOK.

- 1.1 Some of the factors that make computers so powerful are the ...
- A ability to produce accurate results despite inaccurate input.
 - B ability to do human tasks faster than humans.
 - C speed, reliability, accuracy and ability to communicate with other computers.
 - D errors.
- 1.2 To be able to communicate via an analogue telephone line a computer needs a ... to convert analogue signals to digital signals and vice versa.
- A dial-up server
 - B dial-up network interface card
 - C dial-up modem
 - D dial-up switch
- 1.3 The cycle of ... is called the machine cycle.
- A search, analyse, select and use
 - B typing, editing, storing and printing
 - C input, process, output and storage
 - D fetching, decoding, executing and storing
- 1.4 The cycle of ... is called the information processing cycle.
- A search, analyse, select and use
 - B typing, editing, storing and printing
 - C input, process, output and storage
 - D fetching, decoding, executing and storing
- 1.5 Current personal computer hard disks can have a storage capacity of ...
- A 160 kilobytes.
 - B 160 megabytes.
 - C 160 gigabytes.
 - D 160 terabytes.
- 1.6 The clock speed of the CPU of a powerful modern computer can be ...
- A 4 megabytes.
 - B 4 megahertz.
 - C 4 gigabytes.
 - D 4 gigahertz.

1.7 The ... interprets and carries out the basic instructions that operate a computer.

- A central processing unit
- B motherboard
- C system unit
- D hard drive

1.8 A series of instructions that tell a computer how to perform the tasks necessary to process data to information is referred to as a/an ...

- A input device.
- B program.
- C command.
- D output device.

1.9 All of the following are commonly used output devices, except ...

- A display devices and printers.
- B pointing devices and keyboards.
- C data projectors and speakers.
- D facsimile machines and headsets.

1.10 A compact disc-rewritable (CD-RW) is an erasable disc. Users can ...

- A write to different parts of the disc, one after the other.
- B write to each part of the disc only one time.
- C not erase the content of the disc.
- D write to the disc multiple times.

(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 (2.1–2.5) in the ANSWER BOOK.

2.1 The world-wide web is one of the services of the internet.

2.2 A modem is necessary to connect a computer to a local area network.

2.3 A software suite such as Microsoft Office consists of programs that control the operations of the computer and its devices.

2.4 Flash memory card is a nonremovable device that users insert into a computer device.

2.5 A rescue disc is a CD that contains an uninfected copy of key operating system commands and start-up information.

(5 × 1) [5]

QUESTION 3

Choose a term from COLUMN B that matches a description in COLUMN A. Write only the letter (A–L) next to the question number (3.1–3.10) in the ANSWER BOOK.

COLUMN A		COLUMN B	
3.1	Gets computer system started after being turned on and manages data flow between operating system and peripherals	A	device driver
		B	utility
3.2	Converts basic computer instructions into a pattern of bits	C	CPU
		D	compiler
3.3	All attached computer devices	E	BIOS
3.4	Brain of computer	F	primary memory
3.5	Controls hardware connected to computer	G	peripherals
3.6	Disk defragmenter	H	microphone
3.7	Example of output hardware	I	debugger
3.8	Development tool	J	byte
3.9	Unit to measure data	K	secondary memory
3.10	Example of input device	L	cathode ray tube

(10 × 1)

[10]**QUESTION 4**

4.1 A file needs to be loaded from a computer disk to the memory. The time required to perform this task is known as access time.

Name TWO time units associated with this task.

(2)

4.2 What does the abbreviation GUI mean?

(2)

4.3 The two files PROG_1.BAS and BASIC.exe are given on a computer disk.

What is the difference between the TWO file extensions?

(2)

4.4 Explain how you would control high temperatures in a computer room so that it does not cause serious damage.

(5)

4.5 Write brief notes on a server computer in industry.

(4)

[15]

QUESTION 5

- 5.1 Name TWO types of software interrupts which play an important role in computer operations. (2)
- 5.2 For what is the stack in the computer memory used? (2)
- 5.3 Loops in a BASIC program enable the execution of a small program to be repeated several times.
Give the TWO instructions associated with BASIC loops. (2)
- 5.4 Documentation plays a role in using and developing computer software.
What is the purpose of internal documentation when associated with a software programmer? (2)
- 5.5 The description *ELECTRICAL ENGINEERING* must be printed on a report form.
Write the complete BASIC statement for this. (2)
- [10]**

QUESTION 6

- 6.1 State FIVE disadvantages of a programming aid like flowcharts. (5)
- 6.2 State FIVE advantages of modular program structures. (10)
- [15]**

QUESTION 7

- 7.1 Write brief notes on the following registers found in the central processing unit:
- 7.1.1 Index register
- 7.1.2 Instruction register
- 7.1.3 Program counter (3 × 2) (6)

- 7.2 List FOUR functions performed by the operating system which is considered the most important software installed on a computer. (4)
- 7.3 Discuss programmer support programs and their importance to the programmer. (5)
- 7.4 List FIVE software errors that the operator may come across during a normal day at the office. (5)
- [20]**

QUESTION 8

- 8.1 Standard flowchart symbols are used by the programmer in the initial phase of program development.

Draw a simple flowchart for the following BASIC program:

```
10 REM QUESTION 8
20 CLS
30 INPUT J
40 INPUT K
50 DIV = J/K
60 CLS
70 PRINT "DIVISION = "; DIV
80 END
```

- (6)
- 8.2 Differentiate between *debugging* and *testing* during software development. (4)
- 8.3 Rapid application development (RAD) means several programmers work as a team to deploy software in the quickest time. (5)
- Give FIVE reasons for the development of rapid applications. (5)
- [15]**

TOTAL: 100