higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T410**(E)**(A13)T

NATIONAL CERTIFICATE

COMPUTER PRINCIPLES N4

(6040034)

13 April 2018 (X-Paper)
09:00–12:00

This question paper consists of 6 pages.

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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 according to the numbering system used in this question paper.
4. Write neatly and legibly.

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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 (1.1.1–1.1.6) in the ANSWER BOOK.

1.1.1 The … is a main memory type of a computer.

A RAM
B CPU
C DVD
D VDU

1.1.2 A … can process a large number of transactions and have many users connected at one time.

A mainframe
B laptop
C personal digital assistant
D smartphone

1.1.3 Plotters are considered to be … devices.

A input
B output
C mapping
D portable

1.1.4 A … is an example of an input device.

A light pen
B cathode-ray tube
C plasma screen
D liquid crystal display

1.1.5 Printers are classified into the following categories:

A Hard copy and soft copy
B Laser, inkjet and dot-matrix
C Impact and non-impact
D Cartridge and toner

1.1.6 The … performs all the calculations and functions of the computer.

A expansion card
B motherboard
C CPU
D RAM

(6 × 1) (6)

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1.2 State TWO advantages of an algorithm as a programming aid. (2)

1.3 Name any TWO units that indicate the data storage capacity of a computer. (2)
[10]

QUESTION 2

2.1 What does the acronym *ASCII* stand for? (2)

2.2 Name the FIVE main physical building blocks of a computer system. (5)

2.3 Define *computer hardware*. (2)

2.4 State the function of an output device and give TWO examples of such a device. (4)
[13]

QUESTION 3

3.1 Differentiate between *computer peripheral devices* and *computer software*. (4)

3.2 Name FOUR types of volatile computer memories found in industry. (4)

3.3 Name TWO advantages of nonvolatile computer memories. (2)
[10]

QUESTION 4

The different peripheral devices coupled to a computer system require various interfaces. The interfaces allow the peripheral device to communicate with the central processor over a bus, shared by other devices.

Explain each of the following SIX main functions of interface devices:

4.1 Control

4.2 Buffer

4.3 Status

4.4 Conversion

4.5 Housekeeping

4.6 Program interrupt

(6 × 2) **[12]**

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QUESTION 5

Computers are sensitive to the physical environment.

Discuss the following and the impact of each on computer operations:

5.1 Computer staff (5)

5.2 Computer room layout (5)

5.3 Humidity (5)
[15]

QUESTION 6

6.1 Standard flowchart symbols are used by the computer programmer in the initial phase of programming development.

Name each of the following flowchart symbols:

6.1.1

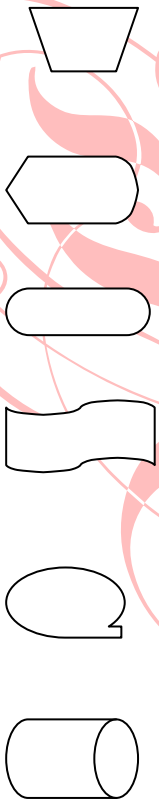
6.1.2

6.1.3

6.1.4

6.1.5

6.1.6



(6 × 1) (6)

6.2 State FIVE advantages of a programming aid like flowcharts. (5)
[11]

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QUESTION 7

7.1 What is the purpose of error subroutines as applicable to computer software? (4)

7.2 State FIVE advantages of modular program structures. (10)
[14]

QUESTION 8

Use your own BASIC statement or a series of statements for each of the following:

8.1 Determine the difference of *J* and *K* plus *L*. (3)

8.2 Print the words 'Computer Principles N4' on the screen. (2)

8.3 Complete the following BASIC statements:

10 IF … THEN … (2)
20 INPUT … (1)
30 PRINT … (1)
40 GOTO … (1)

8.4 Study the following BASIC program. Make corrections where applicable if the rules for nested loops were not followed:

```
20 FOR J = 1 OT 5
10 FOR K = 1 TO 5
30 RINT J, K
30 NXET K
40 PRINT
60 NEXT J
50 END
```

(5)
[15]

TOTAL: 100

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