higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

# NATIONAL CERTIFICATE (VOCATIONAL)

## INTRODUCTION TO SYSTEMS DEVELOPMENT
**(**First Paper**)**
**NQF LEVEL 2**

(10041022)

**12 March 2018 (X-Paper)**
**09:00–11:00**

**This question paper consists of 6 pages.**

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**TIME: 2 HOURS**
**MARKS: 100**

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**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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NCV

## QUESTION 1

What do the following abbreviations or acronyms stand for?

1.1 CPU

1.2 RAD

1.3 BASIC

1.4 FORTRAN

1.5 COBOL

1.6 VCL

1.7 IDE

1.8 GUI

1.9 PHP

1.10 HTML

(10 × 1) **[10]**

## QUESTION 2

Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (2.1–2.10) in the ANSWER BOOK.

2.1 A string is a letter, number or symbol.

2.2 A relational operator in computer programming is used to test a condition or the relationship between two entities.

2.3 Software is generally written in a low-level language that is easier and more efficient for the programmer to use.

2.4 A feature is a distinctive attribute or aspect of a program.

2.5 An algorithm is a procedure or formula for accomplishing a task.

2.6 OOP languages are not effective at recycling code.

2.7 Defensive programming is a way of writing source code so that the program can continue working in spite of unforeseen actions and inputs by the user.

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2.8 Pseudocode is a generic, compact, informal way of writing an algorithm using the conventions of programming languages, but without language-specific syntax.

2.9 A software bug is an error, flaw, mistake, failure or fault in a computer program that prevents it from working as intended, or produces a correct result.

2.10 An operating system is a type of application software that manipulates the data on the computer.

(10 × 1) **[10]**

## QUESTION 3

3.1 Choose an item from COLUMN B that matches a description in COLUMN A. Write only the letter (A – J) next to the question number (3.1.1- 3.1.10) in the ANSWER BOOK.

| | **COLUMN A** | | **COLUMN B** |
|---|---|---|---|
| 3.1.1 | For browsing the World Wide Web | A | android |
| 3.1.2 | Creating a presentation | B | internet explorer |
| 3.1.3 | To store, organise and manage large amounts of data easily. | C | antivirus programs |
| | | D | Microsoft PowerPoint |
| 3.1.4 | Mobile operating system | E | Visual Basic.net |
| 3.1.5 | Open Source operating system | F | Linux |
| 3.1.6 | The location where the web page is hosted. | G | Windows server 2008 |
| 3.1.7 | Utility program | H | serve |
| 3.1.8 | Command-line interface operating system | I | database |
| | | J | MS DOS |
| 3.1.9 | Proprietary network operating system | | |
| 3.1.10 | High-level programming language | | |

(10 × 1) (10)

3.2 Name the different features common to all types of application software. (4)

3.3 Briefly describe the term *system software*. (2)

3.4 Name TWO different types of operating systems. (2)

**[18]**

## QUESTION 4

4.1 List FIVE generations of programming languages in the order in which they have evolved, and give an example of each. (5 × 2) (10)

4.2 Give TWO advantages and TWO disadvantages of high-level programming languages. (2 × 2) (4)

4.3 Explain the following terms used in object-oriented programming:

4.3.1 Encapsulation

4.3.2 Abstraction

4.3.3 Polymorphism

(3 × 2) (6)

4.4 Explain the TWO different types of code recycling. (4)

**[24]**

## QUESTION 5

5.1 Define the following data type terms, using an example to support each definition:

5.1.1 Numbers

5.1.2 Boolean

5.1.3 String

(3 × 2) (6)

5.2 Evaluate the following expressions:

5.2.1 a) D OR K AND NOT S where D = TRUE, K = FALSE, S = TRUE (4)

5.2.2 M > 7 AND D < S ^ 2 where M = 7, D = 8, S = 4 (5)

**[15]**

## QUESTION 6

6.1 The problem-solving process consists of a sequence of steps that you must follow to arrive at a solution for a problem.

Name FIVE steps of problem solving. (5)

6.2 Draw a flowchart to enter 2 numbers that are not equal and display the bigger number. (6)

6.3 What are the THREE more commonly used types or classes of algorithms? (3)

**[14]**

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## QUESTION 7

7.1 When a programmer has to evaluate the viability of developing a software solution for a company, it is important to determine the benefits of such a system.

List FIVE benefits that software development can hold for a company. (5)

7.2 Name THREE different methods or models used in QA. (3)

7.3 Define the term *online processing*. (1)
**[9]**

**TOTAL: 100**

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