higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

INTRODUCTION TO SYSTEM DEVELOPMENT

(First paper)

NQF LEVEL 2

(10041022)

11 March 2020 (Y-paper)
13:00–15:00

This question paper consists of 6 pages.

493Q1S2011

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TIME: 2 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. Start each question on a new page.
5. Write neatly and legibly.

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SECTION A

QUESTION 1

Choose the correct word or words from those given in brackets. Write only the word or words next to the question number (1.1–1.10) in the ANSWER BOOK.

1.1 (Apple/Microsoft) was the first company to use a graphical user interface with their operating system.

1.2 (Usability/Functionality) is the set of product features and functions of a software application and its functions.

1.3 (Linux/Windows 2000) is free software.

1.4 VPL allows the user to create specific programs in a (graphical/textual) way.

1.5 A (variable/constant) stores a value that can change in a program.

1.6 Operating systems and utility programs are examples of (application/system) software.

1.7 (Verification/Validation) means to check whether the program gives the intended output.

1.8 (Utility programs/Language translators) converts a high-level language into a low-level language

1.9 (Open source/Proprietary) software is owned by a legal entity such as Microsoft.

1.10 The (ASCII\Unicode) system is used to represent Greek characters in computer systems.

(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 An operating system is a type of application software that performs a specific task for the end user.

2.2 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.

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

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

2.5 OOP languages are not effective at recycling code.

2.6 Computer software is instructions or data that can be stored electronically and enables a computer to perform tasks.

2.7 High-level languages are easier to understand and learn because they are closer to the language of humans.

2.8 For a user to be able to get online help, he/she should not be connected to the internet.

2.9 The maintenance of software incorporates all the development phases of the software product.

2.10 Flexibility is the main benefit of low-level languages.

(10 × 1) (10)
[20]

TOTAL SECTION A: 20

SECTION B

QUESTION 3

3.1 Name THREE different types of system software. (3)

3.2 Application software is written to perform according to a specific operating system's characteristics.

List FIVE characteristics of operating systems. (5)

3.3 Name THREE stages/versions of software. (3)
[11]

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QUESTION 4

4.1 Define the following terms:

4.1.1 Object-oriented programming

4.1.2 Visual programming languages

4.1.3 Event-driven programming

4.1.4 Rapid application development

(4 × 2) (8)

4.2 Name TWO main forms of code recycling. (2)

[10]

QUESTION 5

Explain the following programming terms:

5.1 Variables

5.2 Data types

5.3 Constant

5.4 Procedures

5.5 Functions

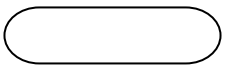
(5 × 2) **[10]**

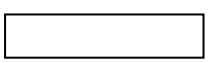
QUESTION 6

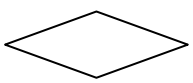
6.1 List FOUR methods for documenting and specifying a solution for a given problem. (4)

6.2 Name THREE logical operators used in pseudocode. (3)

6.3 Name the following flowchart symbols:

6.3.1 

6.3.2 

6.3.3 

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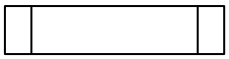
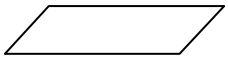
6.3.4 

6.3.5 

6.3.6 

(6 × 1) (6)

6.4 Calculate the value of the variable, T, where

T = a * b ^(16 – c) mod 4 + 3 \ a where a, b and c are integer variables and have the following values: a = 3, b = 5, c = 11. (8)

6.5 Enter the length and the width of a tennis court in meters and calculate and display the perimeter and the area of the tennis court.

Draw the IPO chart for the above problem to be solved. (8)

6.6 Evaluate the following expressions:

A or B and NOT C where A = TRUE, B = FALSE, C = TRUE (6)

[35]

QUESTION 7

7.1 What are the THREE basic principles of indentation? (3)

7.2 Give FOUR advantages of having a QA team involved while developing a software product. (4)

7.3 Name THREE methods used in QA. (3)

7.4 What is the difference between *feasibility* and *viability*? (4)

[14]

TOTAL SECTION B: 80
GRAND TOTAL: 100

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