higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

INTRODUCTION TO SYSTEMS DEVELOPMENT

(First paper)

NQF LEVEL 2

18 November 2022

This marking guideline consists of 5 pages.

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SECTION A

QUESTION 1

1.1 B
1.2 C
1.3 A
1.4 D
1.5 B
1.6 B
1.7 C
1.8 A
1.9 D
1.10 C

(10 × 1) **[10]**

QUESTION 2

2.1 E
2.2 J
2.3 G
2.4 I
2.5 B
2.6 A
2.7 D
2.8 F
2.9 H
2.10 C

(10 × 1) **[10]**

TOTAL SECTION A: 20

SECTION B

QUESTION 3

3.1 3.1.1 Proprietary software – software programs that users must buy.

3.1.2 Open-source software – programs that users can obtain for free and they can modify it to suit their needs.

(2 × 2) (4)

3.2
- Word-processing software
- Spreadsheet software
- Presentation software
- Database software
- Multimedia software

(5)

3.3
- Operating system✓ – A type of system software that manages all the software resources of a computer.✓
- Device drivers✓ – Specialised programs that allow the computer to communicate with a peripheral device such as printer or scanner.✓
- Language translators – Converts a high-level programming language into low-level language that the computer can understand.
- Utility programs – Specialised software that performs one specific task.

(Any 2 × 2) (4)

3.4 True (1)
[14]

QUESTION 4

4.1
- HTML
- CSS
- JavaScript

(3)

4.2

Name	Description	Typical use
C	A high-level, general-purpose, procedural language.✓	Used in embedded systems. ✓
C++	A high-level, statistically typed, multi-paradigm, object-oriented language; an enhancement of C-language.✓	Used for computer games and Office suite.✓
Java	A high-level, object-oriented language that runs on virtual machines.✓	Runs on a wide range of systems.✓
PHP	A high-level, open-source, scripting language.✓	Used in web development.✓
Python	A high-level, open-source, dynamically typed, scripting language.✓	General-purpose application.✓
Delphi Embarcadero	A high-level, general-purpose language.✓	General-purpose application that needs to be developed quickly.✓

(6 × 2) (12)
[15]

QUESTION 5

5.1
- Character✓ – A letter, number, or symbol.✓ **OR**
  String – A linear sequence of characters, words, or other data that the user can input from the keyboard.✓
- Boolean data✓ – The most concise type of data and comes from machine language.✓
- Numbers✓ – The most common numbers used that are integer or whole numbers and they may be positive or negative.✓
- Date and time✓ – Data types that contain numbers formatted as dates or time.✓ (4 × 2) (8)

5.2 American Standard Code for Information Interchange (2)
[10]

QUESTION 6

6.1 Step 1: Understand the problem.
Step 2: Devise a plan to obtain possible solutions.
Step 3: Evaluate the solutions and choose the best one.
Step 4: Test the solution, resolve errors and apply the changes.
Step 5: Implement the solution. (5)

6.2
6.2.1 5^4
6.2.2 8 not equal to 5
6.2.3 200/5
6.2.4 ∑ means sum of
6.2.5 Square Root (60)
(5 × 1) (5)

6.3 Method used to analyse a problem and then break it down into individual processes; the steps are in the form of boxes that are connected with arrows. (2)

6.4
- IF-THEN selection structure
- IF-THEN-ELSE selection structure
- WHILE structure
- FOR-NEXT repetition structure (4)

6.5
6.5.1 A = Properties
B = Toolbox
C = Solution Explorer (3)

6.5.2 Controls/Tools (2)

6.5.3 btnCalculate (2)

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6.5.4

Input	Processing	Output
TicketPrice✓ NumberOfTickets✓ AmountTendered (2 marks for all correct inputs)	TotalAmount = TicketPrice *NumberOfTicket✓✓ Change = AmountTendered – TotalAmount✓ (3 marks for correct calculations)	TotalAmount Change✓ (1 mark for correct output)

(6)

6.5.5 Stadium System (1)

6.5.6 &Calculate (1)

6.5.7 11 Controls (1)

[32]

QUESTION 7

7.1
- Process implementation
- Process assurance
- Product assurance (3)

7.2
- Test plan✓ – Documentation that describes the testing specifications of the software product.✓
- Test data✓– A collection of data that is inserted into the software product to test the outcomes.✓
- Syntax checking✓ – The ability to check whether the source code is correct in a given programming language.✓ (3 × 2) (6)

[9]

TOTAL SECTION B: 80
GRAND TOTAL: 100

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