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

7 December 2020

This marking guideline consists of 6 pages.

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SECTION A

QUESTION 1

1.1 Input, process and output

1.2 Visual Basic

1.3 Unified modelling language

1.4 Object-oriented programming

1.5 Graphical user interface

1.6 Integrated development environment

1.7 Rapid application development

1.8 Visual programming languages

1.9 Event-driven programming

1.10 Personal home page

(10 × 1) **[10]**

QUESTION 2

2.1 True
2.2 False
2.3 True
2.4 True
2.5 True
2.6 True
2.7 False
2.8 False
2.9 True
2.10 True

(10 × 1) **[10]**

TOTAL SECTION A: [20]

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SECTION B

QUESTION 3

3.1 System software is computer software designed to operate the computer hardware and to provide a platform for running application software.✓ Example: Windows, Linux✓ (2)

3.2 Disadvantages:

- Closed standards may hinder compatibility with other software or between different operating system.
- It is expensive to buy the licence for the software.
- The software may not be changed or customised without the vendor's permission.
-

Advantages:

- Customer support is obligatory.
- The software is updated regularly. (5)

3.3
- Retrieve data rapidly from databases
- Interactive/online
- Support special requests for data from relational databases (3)

3.4
- Technicality✓ – the ability of software to work on different types of systems with different types of hardware configurations.✓
- Flexibility✓ – the ability of the software application to do the work for which it was intended ✓
- User-friendliness✓ – a user can perform tasks by using a particular tool with ease✓
- Speed✓– makes people work more efficiently and effectively✓ (8)

3.5
- Binary-coded decimal (BCD)✓ – is the most common way of encoding decimal digits in computing.✓
- Extended binary-coded decimal✓ – is an IBM code that represents characters as numbers.✓
- Unicode✓ – is a standard code for representing characters and numbers.✓
- American standard code for information interchange✓ – is the code used to represent English characters as numbers.✓ (4)

3.6 A string is a linear sequence of characters – a group of alpha-numeric symbols enclosed in quotes.✓ (1)

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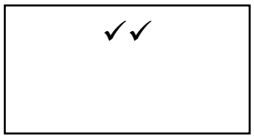
WAS NOT PROVIDED IN THE MG

QUESTION 4

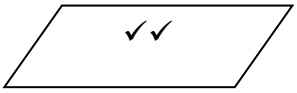
4.1 4.1.1 Terminal



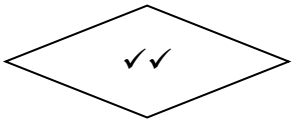
4.1.2 Process



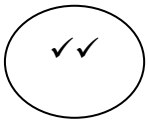
4.1.3 Input/output



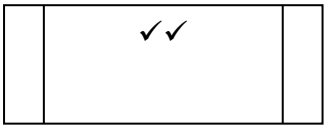
4.1.4 Decision



4.1.5 Connector



4.1.6 Predefined Process/Module Symbol



(6 × 2) (12)

4.2
- IF-THEN selection structure
- IF-THEN-ELSE structure
- WHILE and FOR-NEXT statement (3)

4.3
- Process implementation✓ – this process is coordinated with the related verification and validation as quality assurance process.✓
- Process assurance✓ – assures that life-cycle processes employed for the project comply with the contract and plans.✓
- Product assurance✓ – ensures that all plans required by the contract are documented and executed in preparation for the delivery of software.✓

(Any other relevant answer) (6)

4.4
- Implicit declaration does not require any pre data type – declaration is performed automatically.
- Dim sName
- Explicit declaration – strictly defines variable data type before use.
- Dim sName as string (2)

4.5
- Component testing
- Integration testing
- System testing
- Acceptance testing (Any 4 × 1) (4)

4.6
- Syntax error✓ – occurs when commands are mistypes or certain characters are omitted. ✓
- Logical error✓ – occurs when the program does not return the expected result.✓
- Run-time✓ – occurs when a program does not use good validation techniques to avoid the program from crashing.✓ (6)

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QUESTION 5

5.1 5.1.1
= 12 – 5 + 14 mod 2 ^ 2✓
= 12 – 5 + 14 mod 4✓
= 12 – 5 + 2✓
= 7 + 2✓
= 9✓ (5)

5.1.2
12 × 6 \ 3 / 2 – 4 + 2✓
= 72 \ 3 / 2 – 4 + 2✓
= 72 \ 1- 4 + 2✓
= 72 – 4 + 2✓
= 68 +2✓
= 70✓ (6)

5.2 5.2.1

INPUT	PROCESS	OUTPUT
Name✓ Age✓	Prompt to read input name✓ age✓ Display name and age on the screen✓✓	Name✓ Age ✓

(8)

5.2.2 Algorithm:

Show Details

~ This program will enter the name and the age of the learner and show it on ~ the screen✓
Display 'Provide the name of the learner:'✓ ~ display on new line
Enter name✓
Display 'Provide the age of the learner:'✓ ~ display on new line
Enter age✓

~ Show the details on the screen with appropriate legends✓
Display 'The name of the learner is ', name✓ ~ display on new line
Display 'The age of the learner is ', age✓ ~ display on new line
end✓✓ (5)

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TOTAL: 100

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