higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

COMPUTER PROGRAMMING
(First paper)
NQF LEVEL 4

16 March 2020

This marking guideline consists of 5 pages.

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SECTION A

QUESTION 1

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

(10 × 1) **[10]**

QUESTION 2

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

(10 × 1) **[10]**

QUESTION 3

3.1 Third normal form
3.2 Coupling
3.3 Bandwidth
3.4 HTTP / HTTPS
3.5 Web-based application / Web Application

(5 × 1) **[5]**

TOTAL SECTION A: 25

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SECTION B

QUESTION 4

4.1 4.1.1 Microsoft IIS or Apache (OR any relevant answer)
4.1.2 MYSQL or Oracle or MS SQL Server (OR any relevant answer)
4.1.3 MS Exchange (OR any relevant answer)
(3 × 1) (3)

4.2 4.2.1 Global data sharing means declaring variables so that they are accessible from anywhere in the whole program.

4.2.2 Cohesion refers to how well the variables and methods defined within a class are related and work together.
(2 × 2) (4)

4.3 Degree – number of entity types (columns) that participate in a relationship

(OR Any other relevant answer) (2)

4.4 The data transfer rate is commonly used to measure how fast ✓data is transferred from one location to another✓. Data transfer rates are typically measured in bits per second✓ (bps) as opposed to bytes per second✓.

Bandwidth refers to the amount of data✓ that can be transferred at one time✓. It is used to describe network speeds✓ usually in Megabytes per second (Mbps) ✓but it is not an indication of how fast data is transferred.
(OR Any OTHER relevant response) (8)

4.5
```
Public Class clsEMPLOYEE✓
    Private _DateHired ✓ AS Date✓
    ReadOnly Property✓ DateHired ()✓
        Get
            Return _DateHire✓
        End Get
    End Property
    Public Sub CalculateAge()✓
    End Sub
End Class
```
(7)
[24]

QUESTION 5

5.1 ADVANTAGE
Allows you to design the webpage and the tool generates the HTML code. You can see what the webpage looks like as you design.
(OR any relevant answer) (1)

DISADVANTAGE
- They are expensive and it is difficult to learn how to use them.
- It generates a bloated code (too many unnecessary lines of codes) which is complicated to understand. (2)

5.2
- Makes source code easier to read & understand
- Reduces the effort required to maintain or extend older systems
- Reduces the need to develop alternative documentation/systems manuals

(OR Any other relevant response) (3)

5.3

ENTITY TYPE	ENTITY INSTANCE
It is a collection of entities that share common attributes.✓	It is a single occurrence of an entity type.✓
Entity type: STUDENT✓ Attributes: Cellphone, Surname, Date of birth✓	Instance of STUDENT✓ Values: 083 456 5050, Jacobs, 24 May 1998✓

(2 × 3) (6)

5.4 5.4.1 Line 4: Set the top margin of 30 pixels,✓ top border of the division to blue dotted✓ line with thickness of 2 pixels,✓ all text to be centred.✓ (4)

5.4.2 Line 5: Webpage with green background (1)

5.4.3 Line 6: Any paragraph with class name 'big' should be big in size. (1)

5.4.4 Line 10: This division will absorb all rules under the name footer. (1)

5.4.5 Line 11: This paragraph in big font size (1)

Line 12: Paragraph with default font size (1)

5.5
```
SELECT Course Code✓, Course Name✓, Student Name✓
FROM Course. Registration✓
WHERE Course.Course Code✓ = Registration.Course Code✓
AND Registration.Course Code = 'EIC'✓
```
(7)

[28]

QUESTION 6

6.1 Server page technolgies:
ASP,✓ PHP,✓ ASP.NET✓ (OR any relevant answer) (3)

6.2 6.2.1 A constructor is a special method of a class✓ or structure✓ that initializes an object of that type. ✓
(3)

6.2.2 Polymorphism refers to a programming language's ability to process objects differently✓ depending on their data type✓ or class✓.
(3)

6.2.3 Information hiding:
Access modifier 'Private' used on data members so that they cannot be accessed outside the class.✓✓ (2)

6.3 6.3.1 isNaN()
Returns false if the value of parameter is numeric,✓ else returns true.✓

6.3.2 lastIndexOf()
Returns the position of the parameter value in the string✓ or -1 if not found.✓

6.3.3 Prompt()
Used to prompt the user to enter a value.✓ When user clicks 'Ok' it returns the entered value, else returns null value.✓

6.3.4 toFixed()
Receives the number of decimal places and rounds off the floating number accordingly.✓✓
(4 × 2) (8)

6.4
- Royalty payments are hidden in the total cost of the product.
- The PC seller pays royalties to the operating system (OS) supplier.
- The OS supplier remains the copyright holder.
- The end user buys the right to use the operating system only. (4)

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TOTAL SECTION B: 75
GRAND TOTAL: 100

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