higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)

MULTIMEDIA SERVICE
NQF LEVEL 4

(10040184)

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09:00–12:00

This question paper consists of 10 pages.

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DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATE (VOCATIONAL)
MULTIMEDIA SERVICE
NQF LEVEL 4
TIME: 3 HOURS
MARKS: 150

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. Use only a black or blue pen.
5. Write neatly and legibly.

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SECTION A

QUESTION 1

1.1 Indicate whether the following statements are TRUE or FALSE by writing only 'True' or 'False' next to the question number (1.1.1–1.1.15) in the ANSWER BOOK.

1.1.1 Cybersecurity refers to the state of being protected in cyberspace.

1.1.2 Brute force refers to a hacking method that uses trial and error password guessing.

1.1.3 Cyberattack refers to cybercriminals' failure to attack a network.

1.1.4 Malicious applications can be disguised as a method of helping users on a network to download useful programs.

1.1.5 Malware is a type of antivirus.

1.1.6 POS (point of sales) is an example of an end-point device in a network.

1.1.7 The purpose of address resolution protocol (ARP) is to map an IP address to an email address.

1.1.8 Clusters refer to a group of computers that work together to provide high availability.

1.1.9 An extranet is a private network that uses public Internet to connect two or more locations.

1.1.10 In a peer-to-peer network, all clients' computers communicate via a server.

1.1.11 Caching refers to a browser's way of storing data locally when a user visits a website.

1.1.12 A '404 Error Message' is a message that users receive when they land on the homepage of a news website.

1.1.13 An tag denoting emphasis will indicate content within italics tags.

1.1.14 An alpha site is the first release of a site for a client to review.

1.1.15 SEO stands for search engine optimisation.

(15 × 1) (15)

1.2 Various options are given as possible answers to the following questions. Choose the answer and write only the letter (A–D) next to the question number (1.2.1–1.2.10) in the ANSWER BOOK.

1.2.1 The first day that a vulnerability becomes known:

A Malware software
B Trojan Horse
C Zero-day attack
D HDD boot-up virus

1.2.2 Attacks/Viruses that slow down or crash applications and processes on a client computer:

A Stealth viruses
B Denial of service attacks
C Black Friday virus
D Boot sector virus

1.2.3 Attack/Virus that steals the login credentials of a user to access private data:

A Man-in-the-middle attacks
B Identity theft
C Application virus
D Login virus

1.2.4 Creates a secure connection for remote workers:

A Firewall
B Virtual private network
C Denial of service
D Antivirus program

1.2.5 … identify fast-spreading threats, such as 'zero-day' or 'zero-hour' attacks.

A Virtual private networks
B Dedicated firewall systems
C Firewall systems
D Intrusion detection systems

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1.2.6



The following code snippet is responsible for the *Contact Us* button on the webpage shown above:

A <h1>Contact Us</h1>
B <bold>Contact Us</bold>
C <button>Contact Us</button>
D <emphasis>Contact Us</emphasis>

Refer to the following table to answer QUESTION 1.2.7–1.2.10.

Customer Table

First Name	Last Name	Age
Jill	Smith	50
Eve	Jackson	94

1.2.7 To code the 'First Name" on the table, the following code was used:

A <table>First Name</table>
B <td>First Name</td>
C <th>First Name</th>
D First Name

1.2.8 To code 'Smith' on the table, the following code was used:

A <th>Smith</th>
B <td>Smith</td>
C Smith
D <tr>Smith</tr>

1.2.9 To display '94' on the table, the following code was used:

A <td>94</td>
B <data>94</data>
C '94'
D <table>94</table>

1.2.10 To display 'Customer Table', the following code was used:

A <bold>Customer Table</bold>
B <head>Customer Table</head>
C <1h> Customer Table</1h>
D <h2>Customer Table</h2>

(10 × 1) (10)
[25]

TOTAL SECTION A: 25

SECTION B

QUESTION 2

2.1 Define the core functions of each of the following types of servers:

2.1.1 FTP servers

2.1.2 DHCP servers

2.1.3 DNS servers

2.1.4 Mail servers

2.1.5 Web servers

(5 × 2) (10)

2.2 Differentiate between the following network equipment, providing an example of how each equipment is used. Tabulate your answers in a table below.

Device	Function	Example

2.2.1 Repeater and router (6)

2.2.2 Switch and bridge (6)

2.3 Define the term *WLAN*. (3)
[25]

QUESTION 3

3.1 Study the table below and answer the questions that follow:

Employee

empNo	empName	birthDate	Salary
800111	James	12/08/2000	R5 900
800112	Timmy	25/02/1999	R12 900
800113	Leon	17/09/1990	R16 800
800241	Sam	10/02/2001	R2 800
800225	Thabo	09/10/1996	R4 780

Create the SQL query for the following that will return:

3.1.1 The *empName*, *birthDate* and *Salary*. (5)

3.1.2 All the records in the Employee table ordered by ascending order according to *empNo*. (4)

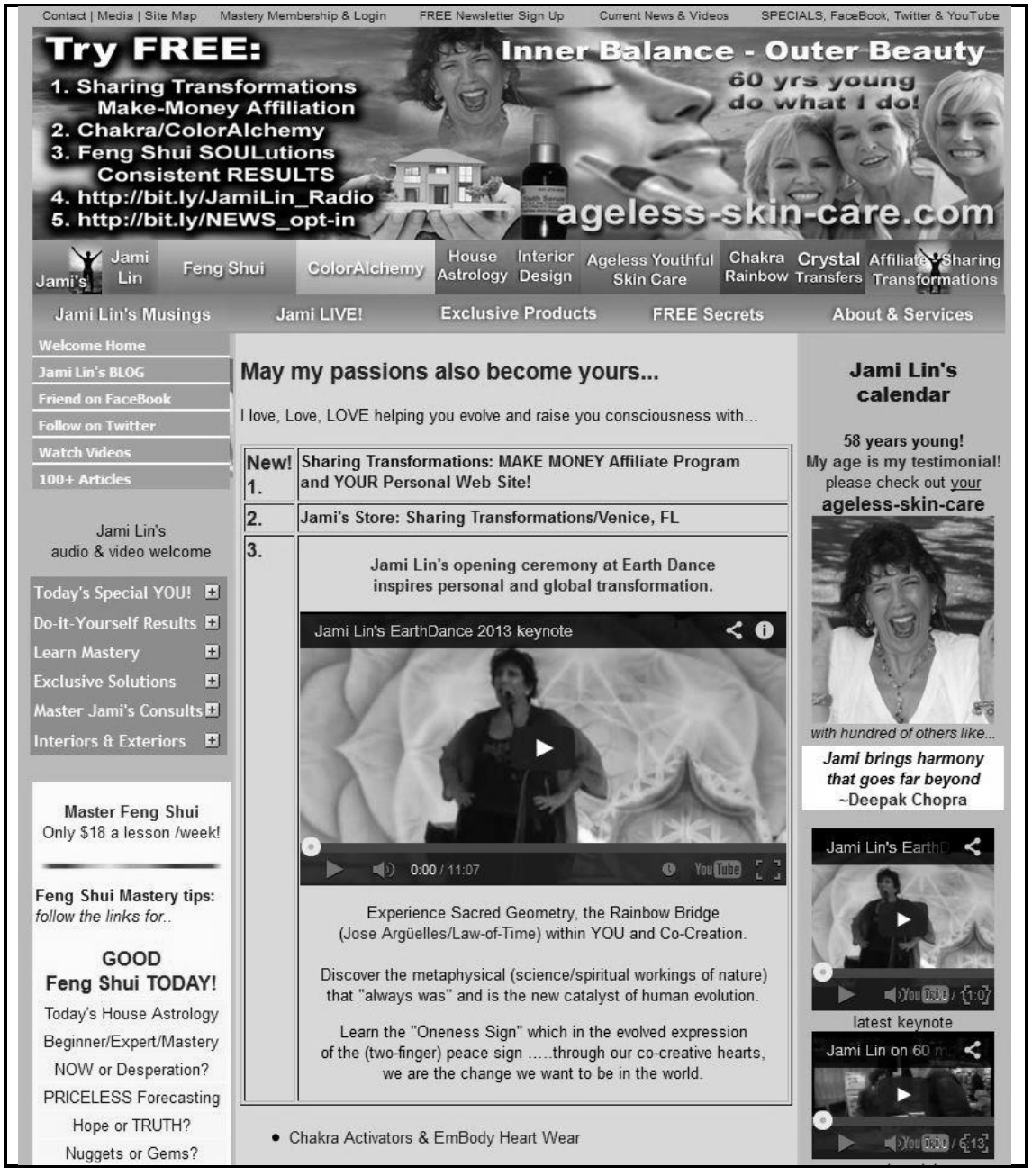
3.1.3 The employee name of those that earn a salary that is more than R5 000. (4)

3.1.4 Insert a record: 800331, Tshego, 23 September 1995, R3 600. (10)

3.2 Explain the term *normalisation*. (2)
[25]

QUESTION 4

4.1 Study the example of a website given below and answer the questions that follow:



4.1.1 Would you classify this as an example of a well- or poorly designed webpage? (2)

4.1.2 Discuss FIVE reasons for the classification in QUESTION 4.1.1. (5 × 2) (10)

4.1.3 Assume that the given website was designed using *frames*.

Discuss how that will affect a user trying to visit this website. (3)

4.2 Study the HTML code given below and answer the questions that follow:

```
Line 1  <!DOCTYPE html>
Line 2  <html>
Line 3  <head>
Line 4    <title>Prompt Box Example</title>
Line 5    <script>
Line 6      function askUserName() {
Line 7                let userName = prompt("Please enter your name:", "Harry
Line 8  Potter");
Line 9          if (userName !== null && userName !== "") {
Line 10           document.getElementById("greeting").innerHTML = "Hello, " +
Line 11 userName + "!";
Line 12         } else {
Line 13           document.getElementById("greeting").innerHTML = "Hello, stranger!";
Line 14         }
Line 15       }
Line 16   </script>
Line 17 </head>
Line 18 <body>
Line 19   <h1>Welcome to Our Website</h1>
Line 20   <button onclick="askUserName()">Click Me</button>
Line 21   <p id="greeting"></p>
Line 22 </body>
Line 23 </html>
```

4.2.1 Explain the use of line 1. (2)

4.2.2 Determine the outcome of line 7. (2)

4.2.3 Explain when line 13 will be executed. (3)

4.2.4 Determine the purpose of line 20. (3)

[25]

QUESTION 5

5.1 You want to insert the Happy Birthday Song on your website as shown below.

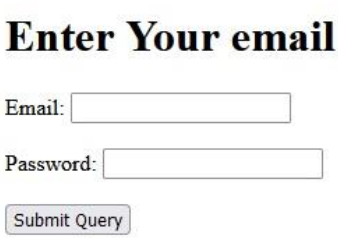
Create the full HTML code for the webpage. The sound file is saved as *birthday.mp3*.



(10)

5.2 In order for users to visit the pay section of an online store website, they are required to enter an email and a password on the webpage as shown on the example below.

Create the code that will allow a user to enter their email and password.



(12)

5.3 Briefly explain the purpose of each of the following HTML tags:

5.3.1 <footer> tag

5.3.2 <nav> tag

5.3.3 <time> tag

(3 × 1) (3)

[25]

QUESTION 6

6.1 Discuss the purpose of a *firewall* on a server in a network. (3)

6.2 Briefly explain each of the following types of firewalls. Give examples of where in a network each could be used.

6.2.1 Packet-filtering firewall

6.2.2 Proxy-service firewall

6.2.3 Next-generation firewall

(3 × 3) (9)

6.3 Explain each of the following cybersecurity threats to web servers in a network:

6.3.1 Phishing

6.3.2 Ransomware

6.3.3 SQL injection

6.3.4 Cross-site scripting

6.3.5 Distributed denial-of-service (DDoS) attack

(5 × 2) (10)

6.4 Discuss the purpose of *intrusion detection software* in a network. (3)

[25]

TOTAL SECTION B: 125
GRAND TOTAL: 150

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