higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

MULTIMEDIA SERVICES
NQF LEVEL 4

24 November 2023

This marking guideline consists of 8 pages.

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SECTION A

QUESTION 1

1.1	1.1.1	C	
	1.1.2	C	
	1.1.3	A	
	1.1.4	B	
	1.1.5	A	
	1.1.6	B	
	1.1.7	A	
	1.1.8	D	
	1.1.9	C	
	1.1.10	A	
			(10 × 1) (10)
1.2	1.2.1	False	
	1.2.2	True	
	1.2.3	False	
	1.2.4	True	
	1.2.5	False	
	1.2.6	False	
	1.2.7	False	
	1.2.8	True	
	1.2.9	True	
	1.2.10	True	
	1.2.11	True	
	1.2.12	True	
	1.2.13	True	
	1.2.14	True	
	1.2.15	False	
			(15 × 1) (15)
			[25]

TOTAL SECTION A: 25

SECTION B

QUESTION 2

2.1	2.1.1	*CREATE DATABASE✓ testDB;✓*	(2)
	2.1.2	*DROP DATABASE✓ musicaDB;✓*	(2)
	2.1.3	*BACKUP DATABASE✓ slimgym*DB✓ *TO DISK* = 'D'✓ *WITH DIFFERENTIAL;✓*	(4)
	2.1.4	*SELECT✓ *✓ FROM✓ Customers✓;*	(4)

2.2 2.2.1 *CREATE INDEX*✓studentSurnames✓ (any index name)
ON✓ students (surname)✓ (4)

2.2.2 *ALTER TABLE*✓ students✓
DROP school✓ (3)

2.2.3 UPDATE✓ students✓
SET school✓ = Hospitality✓
WHERE studentID✓ = 1;✓ (6)
[25]

QUESTION 3

3.1 Purpose✓
What is the purpose of the website, is it to make a profit,✓ educate or interact with others or share your own thoughts? The purpose of the website will affect all the decisions the web developer need to make.

Audience ✓
It must be determined who the target market✓ is in order to design the website in such a way that it will attract that specific target market.

Marketing✓
The web developer must think about how he/she is going to let the website stand out✓ from millions of others. Search engine optimisation is a great tool for marketing as it lets the website appear at the top of a search result.

Text and images✓
The text and images on a website is what will keep the user interested.✓ It will also help with navigation through the website. The developer will decide on the text and images after determining the purpose of the website.

Style✓
The style of the website is designed to attract the target audience. ✓ The style has a look and feel to it which is achieve by using certain fonts, colours and formal or informal layouts.

Layout
The layout of the website is how the content is organised. If the layout is cluttered and difficult to understand, it will distract users from using the website. A user will be more likely to return to a website if it is easy to navigate.
(5 × 2) (10)

3.2
- Personal websites,✓ e.g. blogs,✓ celebrity fan websites, portfolio websites
- Commercial websites,✓ e.g. news,✓ social networking, businesses, CNN, Edgars, Vodacom etc.
- Government websites,✓ e.g. political websites,✓ government organisation websites, ANC, SARS, etc.
- Non-profit organisation websites, e.g. religious websites, animal welfare, etc. (Any 3 × 2) (6)

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3.3 3.3.1 Transmission Control Protocol✓/Internet Protocol.✓ (2)

3.3.2 TCP/IP is a communications standard that enables application programs and computing devices to exchange messages over a network.✓ It is designed to send packets across the internet✓ and ensure the successful delivery of data and messages over networks.✓

The transport layer is responsible for the logical communication between applications running on different hosts, thus providing services to application layer protocols on a higher layer of the TCP/IP network model. (3)

3.3.3 The IP address uniquely identifies every device on the internet;✓ without one, there is no way to contact another device. An IP address serves two principal functions: it identifies the host, or more specifically its network interface, and it provides the location of the host in the network, and thus the capability of establishing a path to that host.✓ (2)

3.3.4 The purpose of an IP address is to handle the connection between devices✓ that send and receive information across a network.✓ (2)
[25]

QUESTION 4

4.1 1✓
2✓
3✓ (3)

4.2 <meta name="viewport"✓✓ content="width=device-width,✓✓initial-scale=1.0">✓✓ (6)

4.3 Normal, unvisited link,✓ hover over link,✓ active link when user clicks on it✓ and clicked link.✓ (4)

4.4
```
<div✓ class="topnav">✓✓
  <a class="active" href="#home">Home</a>✓✓
  <a href="#about">About</a>✓✓
  <a href="#contact">Contact</a>✓✓
  <input type="text" placeholder="Search.."✓✓
</div>✓
```
(12)
[25]

QUESTION 5

5.1 Cybercrime is easy to accomplish✓ and there is a low risk of getting caught.✓ Cybercrime often has high returns for little work.✓ Attackers can target thousands of victims. Money laundering is easier with cryptocurrencies. (3)

5.2 Firewalls are a central architectural element to any network; the barrier that sits between a private internal network and the public Internet.✓ They are designed to keep non-threatening traffic in✓ and to keep dangerous traffic out✓ (3)

5.3 Anomaly detection and reporting - The main goal of an intrusion detection system is to detect anomalies✓ before hackers complete their objective. Once the system detects a threat, the IDS informs the IT staff and provides the following info about the danger: the source address of the intrusion, the target and victim addresses, the type of threat.✓

The secondary goal of an intrusion detection system is to observe intruders✓ and identify: -What resources attackers try to access? How hackers try to bypass security controls. What types of cyberattacks intruders initiate. The company's security operations centre (SOC) and analysts can use this info to improve the network security strategy.✓

Thirdly, some detection systems can respond✓ to malicious activity, such as automatically blocking an IP address or shutting down access to sensitive files.✓ (3 × 3) (9)

5.4 Hackers create fake websites, e-mails, internal memorandums and communication✓ that pretend to be legitimate at appear to be from the company.✓ They then attempt to steal employees' or customers' money, or identity, by getting them to reveal personal information✓ such as credit card numbers, bank information, or passwords.✓ (4)

5.5
- Mapping the application,✓
- analysing the information,✓
- testing client-side controls,✓
- testing the authentication system,✓
- testing the session management system, ✓
- testing the access control system,✓
- testing for input vulnerabilities,
- testing for shared architecture vulnerabilities,
- testing for web server vulnerabilities,
- choosing the best angle of attack and executing the attack

Any 6 x 1 (6)
[25]

QUESTION 6

6.1 6.1.1 The server hard disk is the core of the data warehouse, including all data and applications.✓ For users, the drive reliability is very important since the drive contains important data.✓ To make the drive work well with large amounts of data in a hardworking environment, the server will use the SAS hard disk because of its high speed, stability, and security features. In addition, low-end servers can use a common SATA hard disk.✓ (3)

6.1.2 Server memory/RAM is a type of memory that is used to store data temporarily for the applications and processes running on a server. (2)

✓ It allows the CPU to access the data faster than from the hard drives.✓

6.1.3 Server CPU is the CPU (central processing unit) used on the server. The server has to receive access from a few to thousands of people,✓ so it has strict requirements for fast throughput of large data volumes, super stability, and long-time operation.✓ Therefore, the CPU is the "brain" of the computer and is the primary indicator of server performance. (2)

6.1.4 A server power supply is used to convert wall/line AC power to DC power,✓ which can be distributed and used to power various components in a server, such as the motherboard and the hard drives.✓ (2)

6.2 6.2.1 DNS servers convert URLs✓ and domain names✓ into IP addresses✓ that computers can understand and use. They translate what a user types into a browser into something the machine can use to find a webpage. This process of translation and lookup is called DNS resolution. (3)

6.2.2 A DHCP server is a network server that automatically provides and assigns IP addresses,✓ default gateways✓ and other network parameters to client devices. It relies on the standard protocol known as Dynamic Host Configuration Protocol or DHCP to respond to broadcast queries by clients. (2)

6.2.3 Internet service provider (ISP) refers to a company that provides Internet connections and services✓ to individuals and organisations.✓ ISPs may also provide software packages (such as browsers), e-mail accounts, and a personal website or home page. ISPs can host websites for businesses and can also build the websites themselves (2)

6.2.4 Forward-Lookup Zones allow the DNS server✓ to resolve queries where the client sends a domain name✓ to the DNS server to request the IP address✓ of the requested host.
DNS zones contain the records for the mapping of domain names✓ to IP addresses or other information. The resolution of a domain name to its assigned information is also referred to as forward resolution and the DNS zones associated with such processes are often referred to as forward zones. (3)

6.3 6.3.1 Ring✓ topology (1)

6.3.2 In a ring network, packets of data✓ travel from one device to the next✓ until they reach their destination.✓ Most ring topologies allow packets to travel only in one direction, called a unidirectional ring network. Others permit data to move in either direction, called bidirectional. (3)

6.3.3 If there is a break in the cable, all systems✓ on the network will be unable to access the network.✓ There is total dependence upon the one cable, meaning all systems will be down. (2)
[25]

TOTAL SECTION B: 125
GRAND TOTAL: 150

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