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Q. 2/b

Importance of Subnetting:-

- * It logically divides four network into smaller broadcast domain for traffic reduction.
- * The maintenance and administration of subnets is easy.
- * It logically divides network traffic type for different users and different network protocols.

Advantages of Subnetting:-

- * Boost the network security.
- * Reduce network congestion.
- * Control network growth.
- * Ease administration.

IP address $\rightarrow 192.168.10.0$

The network ID indicates it is a Class C - address.

Subnet mask $255.255.255.0$

Dividing the entire network into 4 - subnets.
(2 bit subnetting)

Network ID $\rightarrow 192.168.10.0$

Subnet mask $\rightarrow 255.255.255.192$ (IDR = 126)

mask no. of host/network = $2^6 - 2 = 62$.

no. of subnets = $2^{(\text{no. of masked bit})} = 2^2 = 4$

Block size = $256 - (\text{New subnet ID})$
 $= 256 - 192 = 64$

1st Subnet ID - $192.168.10.0$

2nd Subnet ID - $192.168.10.64$

3rd Subnet ID - $192.168.10.128$

4th Subnet ID - $192.168.10.192$

Max. no. of IP per subnet = 62.

for 1st subnet

first valid IP $\Rightarrow 192.168.10.64$

Broadcast add. $\Rightarrow 192.168.10.63$

for 2nd sub net :-

first valid IP $\Rightarrow$ 192.168.10.64

Broadcast Address $\Rightarrow$ 192.168.10.125

for 3rd sub net :-

first valid IP $\Rightarrow$ 192.168.10.126

Broadcast Address $\Rightarrow$ 192.168.10.186

for 4th sub net :-

first valid IP $\Rightarrow$ 192.168.10.187

Broadcast Address $\Rightarrow$ 192.168.10.247

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Q. 2/b.

A virtual network gives you online privacy and anonymity by creating a private network from a public internet connection. VPN mask your internet protocol (IP) address so your online actions are virtually untraceable.

* Virtual private network (VPN) is broadly of two types:-

1). Remote Access (VPN):-

* Remote access VPN allows a user to connect to a private network and access its services and resources remotely. The connection between the user and private network happens through the internet and the connection is secure and private.

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Page 4

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Page 35

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Page 35

1/3/9.

Vulnerability Assessment: -

A vulnerability assessment is an analysis of vulnerabilities in IT system as a comparison.

point in time, with the aim of identifying the system weaknesses before hackers can get hold of them.

A vulnerability assessment tests some or all of your system & generates a detailed vulnerability reports.

Steps to conduct A vulnerability Assessment.

1. Asset discovery:-

First, you need to decide what you want to scan. One of the most common cyber security challenges facing organization is lack of visibility into their digital infrastructure. & its connection devices. Vulnerability Assessment tools can perform discovery on public-facing systems & connect directly to cloud providers to identify cloud-based assets.

* Remote access VPN is useful for business user & VPN as well on home users.

* A corporate employee, while travelling, uses a VPN to connect to his/her company's private network remotely access file and resource of the private network.

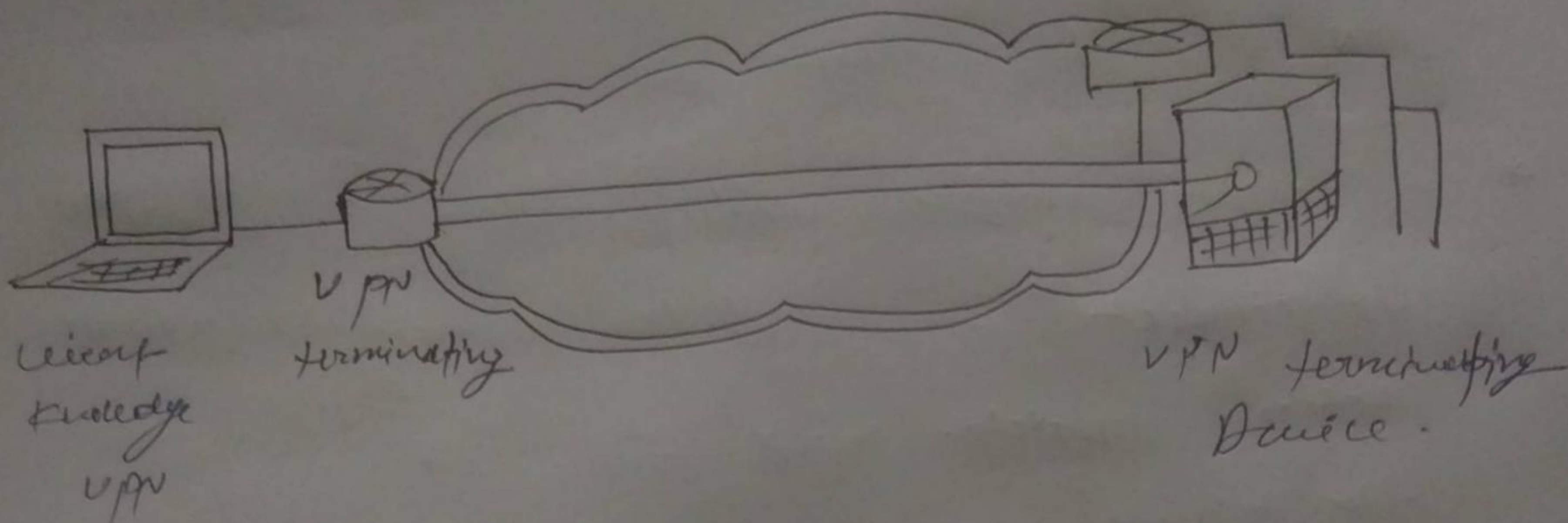


2) Site - Site VPN: -

* A site to site VPN is called as Route to Route. VPN and is mostly used in the corporates.

* When multiple offices of the same company connected using site to site VPN type, it is called as. Internet based VPN

* Since site to site VPN is based on router to router communication in this VPN type one router acts as a VPN client and another router as a VPN server. The communication b/w the two routers starts only after an authentication is validated between the two.



VPN technology has reduced the cost and increased the security of establishing a long distance network by using VPN the cost of maintaining server reduces becomes support can be outsourced to third party service providers and can support a lower cost structure due to many clients.

2. Prioritization! —

Prioritization can help when budgets can't cover every asset the company owns. Such prioritized examples:

- * Internet - facing server.

- * Customer - facing application.

- * Database containing sensitive information.

3. Vulnerability scanning

vulnerability scans are designed to identify known security weaknesses and provide guidance on how to fix them. There is a lot of info. available about vulnerable software.

4. Result analysis & remediation! —

- * After the vulnerability scan is complete the scanner provides an assessment report with results & develops remediation plan. Based on this report, you share the results with the

John.

John: When planning for ourselves
from on the most successful
& well-known first

to membership expansion: not all-
recognition as a group - joining
them.

5. Cooperation system summary: A membership for

provides a guide to the progress of
the membership process in an organization
digital information. However, the departments,
communication changes - many of the same
membership, & other factors can
quickly make the organization obsolete
again. Then, for the future, you
must make understanding necessary
a continuous process
needs. For a better future
action

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Q. 4/a

Program in python: -

```
fahrenheit = float(input("Enter temperature in fahrenheit:"))
```

```
celsius = (fahrenheit - 32) * 5/9
```

```
print('%.2f Fahrenheit is : %.0.2f Celsius' % (fahrenheit, celsius))
```

5. Java Script is mainly used for web based application and web browser but Java Script is also used beyond the ~~web~~ web in software.

Basic thing ^{why} ~~what~~ Java Script is used:

1. Adding Interactive behaviours to web page.
2. Creating web & mobile apps.
3. Game development.
4. Building web servers.

How Java Script is used for conducting attack in a browser?

In case of browser, the attacker is injecting malicious scripts inside of a web application, which is being used by the victim. In general, XSS attacks are based on victim's trust in the legitimacy of the web application they use.

8. Continuous Cyber security-
A vulnerability scan provides a point in time snapshot of the vulnerabilities present in an organization, digital infrastructure. However, new deployments, configuration changes, newly discovered vulnerabilities, & other factors can quickly make the organization vulnerable again. For this reason, we must make vulnerability management & continuous process rather than a one-time exercise.