**DV162\_19\_PAS ON VLANs and VPNs**

**Possible Answer Sheet**

* What is a LAN?  
  Ans: LAN (Local Area Network) is a group of devices that are in the same broadcast domain. LANs are designed to allow devices to share resources like printers, files, and internet access.
* Why might we want to segment a network into smaller pieces?  
  Ans: To manage the network in an efficient and secure way we might want to segment a network into smaller pieces.
* What are the inefficiencies of using multiple switches for a LAN?  
  Ans: Broadcast Size, Complex Troubleshooting, Increased Cost and Mitigation.
* What is VLAN?  
  Ans: A virtual local area network is any broadcast domain that is partitioned and isolated in the network.
* How does VLAN solve the inefficiencies of using multiple switches?  
  Ans: VLAN Solve these inefficiencies by breaking the broadcast domain and separating traffic.
* How can we make a LAN more efficient and cost-effective?  
  Ans: We can make LAN more efficient and cost-effective by converting it into VLANs or virtualization of LAN. This technique or method is more efficient and cost effective as it uses a single switch, maintains a single power source and single configuration.
* How does VLAN provide separation between different networks?  
  Ans: VLANs provide separation between different networks on a logical level, even though they all reside on the same physical network.
* What are the advantages of using VLAN over multiple switches?  
  Ans: Advantages of VLAN over multiple switches are:  
   -Reduce Broadcasts

-Improve Performance  
 -Simplified Management with Logical Grouping  
 -Cost effective as reduces no.s of switches  
 -Easier to scale by adding devices to VLANs

* How does using a single switch with VLANs help to manage and lower costs for a LAN?  
  Ans: VLANs reduces network administration effort or duplicating effort, reduces hardware needs, simplified or easy troubleshooting and obviously lead to overall network cost.
* What is a VPN and how does it work?  
  Ans: VPN stands for Virtual Private Network, it usually consists of a combination of software and hardware that allows securely sending information across the public network or internet.  
  VPN creates an encrypted tunnel back to the VPN concentrator. The VPN concentrator will receive that encrypted information. It will decrypt the data and send that information into the corporate network. Everything sent over a VPN connection is automatically encrypted, making it unreadable if intercepted by anyone in the middle.
* What does a VPN look like on the desktop of an operating system?  
  Ans: VPN interface looks like a web browser or browser extension or an application inside OS. It typically runs in the background as you use other applications. The user can connect and disconnect from the VPN using this interface and may also have options to configure the VPN connection settings.
* Are VPNs typically hardware or software-based?  
  Ans: True

* What is the advantage of using a VPN in a coffee shop?  
  Ans: Through VPN everything sent from your laptop or device will be encrypted across the wireless network so if someone tries to catch or get your data they will be unable to read or understand it because of encryption provided by VPN. So VPN makes you more secure while using the internet of Coffee Shop.
* How does the VPN concentrator handle incoming and outgoing data?  
  Ans: For incoming data VPN concentrator initiates a secure tunnel to the corporate network. Then it decrypts incoming data packets received from remote clients, verifies their authenticity, and forwards them to the appropriate destination within the corporate network.  
  And for Outgoing Data, Data is encrypted and encapsulated by the VPN concentrator. Then the VPN concentrator forwards encrypted data packets through the secure tunnel to the corresponding remote VPN clients.  
  Upon receiving the encrypted data packets, remote VPN clients decrypt and process the data, making it accessible to the end-users or applications.
* Can VPN software be installed on operating systems?  
  Ans: Yes, VPN software can be installed on operating systems.
* Most modern operating systems come included with some type of VPN client.  
  Ans: Yes, it is true.

* What is a VPN concentrator?  
  Ans: A VPN concentrator, also known as a VPN gateway, is a dedicated network device that acts as a central hub for managing Virtual Private Network (VPN) connections. It essentially creates a secure tunnel between remote users or devices and a private network, often used by businesses with many remote employees or geographically dispersed offices.
* The entire process of VPN data encryption happens behind the scenes and is automatic as soon as you enable the VPN software  
  Ans: Yes, It is true.