

# Active Recall [ICT]

- **What is RAID 0?**

- **State one advantage and one disadvantage of striping;**

- **What is RAID 5?**

- **Explain the concept of Parity in RAID;** [Parity in RAID is a calculated value derived from data blocks using XOR operations, stored across multiple disks. It provides fault tolerance by enabling data reconstruction when a single drive fails. For example, in a 3-disk RAID 5 array, the parity block P for data blocks A and B is calculated as  $P = A \oplus B$ . If one disk fails, the missing data can be recovered using the remaining data and parity blocks. This offers storage-efficient redundancy compared to mirroring, but introduces computational overhead during write operations (write penalty).]

- **Which logical operation is used in order to construct the Parity?**

- **What is hot swapping in RAID?**

- **State three (3) benefits of SANs;** [ 1. Centralized Storage Management: SAN allows centralized management, enabling efficient control, allocation, and monitoring of storage resources across multiple servers. 2. High Performance: SANs deliver fast data transfer rates, especially when using Fibre Channel or iSCSI, ideal for data-intensive applications like databases and virtualization. 3. Scalability: SANs can be easily expanded by adding more storage devices without impacting performance, supporting growing storage needs seamlessly.]

- **What are the two data-intensive applications that SANs support?** [Databases and virtualization]

- **What are the four components of the data communication process?** [Encoding and Modulation, Transmission, Decoding and Demodulation, Error Detection]

- **Define modulation;** [Modulation is the process by which the message signal is included in the properties of a high frequency carrier.]

- **Which one offers better interference protection, Twisted Pair Cables OR Coaxial cables?** [Coaxial cables offer better protection from interference due to their shielding.]

The modem creates a local network but **no internet backhaul**.

- **What is a security feature that Bluetooth uses?** [Uses key encryption to create a secure wireless personal area network (WPAN)]

Both hubs and switches cannot communicate beyond the LAN.

A **bridge** connects networks that use the same protocols. A **router** connects networks that use different protocols.

- **What are the four (4) components of the Fetch-Execute cycle? [Fetch → Decode → Execute → Store/Update]**