2. How Can Bit Error Rate (BER) Be Minimized In This Environment

1. Use High Quality Cabling:
   - Use fibre optic cables or high-grade copper for short distances.
   - Avoid damaged or poorly shielded cables.

2. Keep cable lengths Short.
   - Shorter cables reduce signal degradation.
   - Data centers usually have well-structured cabling

3. Use Error Detection and Correction (EDC) Mechanism
   - Implement Protocols like Forward Error correction (FEC). Especially on high-speed links
   - FEC adds some overhead but corrects bit error in real-time.

A Data Center LAN connects Server And Switches with 10 Gbps Links

1. Which Switching Method is Best - Store - and - Forwarding Or cut - Through - For 10 Gbps

Answer

Store - Forward Switching:

- Waits for the entire data frame before forwarding
- Performs error checking (CRC)
- High latency due to full frame storage

Cut - Through Switching:

- Forwards the Frame as soon as destination MAC address is read
- Offers much lower latency
- Does not check the entire frame for error

Recomended Method: Cut - Through Switching

It has very low latency and Fast data forwarding

4. Maintain Proper Environment conditions

- Keep temperature and humidity level stable
- Use proper cooling to avoid overheating network components

5. Regular Hardware Maintenance

- Clean switches, replace faulty transceivers, check, connectors
- Update firmware and devices drivers for NICs and switches

6. Use of Enterprise-Grade Hardware

- Switches and NICs from reputable manufacture offer better Noise tolerance