

**Data Communication & Computer Networks**  
**QUESTIONS BANK FOR MID TERM EXAM**

**UNIT: 1 & 2**

1. Explain the concept of a computer network. What are the key components required to set up a network?
2. Differentiate between LAN, MAN, and WAN with suitable examples.
3. Compare the OSI Reference Model and the TCP/IP Model with examples.
4. Explain the seven layers of the OSI Model along with their functions.
5. Describe the layers of the TCP/IP Model and explain how it maps to the OSI Model.
6. With the help of diagrams, explain Bus, Ring, Star, Mesh, Tree, and Hybrid Topologies.
7. Differentiate between Peer-to-Peer and Client-Server networks. Provide advantages and disadvantages of each.
8. Explain the difference between Guided and Unguided Transmission Media with suitable examples.
9. Describe the construction, advantages, and disadvantages of Twisted Pair Cable, Coaxial Cable, and Fiber Optic Cable.
10. Compare Radio, Microwave, and Infrared Transmission in terms of frequency range, applications, and limitations.
11. Define Analog Signals and Digital Signals. Explain the key differences between them.
12. Compare FDM, TDM, and WDM Multiplexing Techniques. Give one real-life application of each.
13. Differentiate between Circuit Switching, Packet Switching, and Message Switching. Which one is most widely used today and why?
14. Explain Simplex, Half-Duplex, and Full-Duplex Transmission Modes with examples.