

BIT 5203 – Computer and Communication Networks

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Tutorial 1

- 1) What do you understand by a communications network?
- 2) Describe the characteristics of a link, giving typical examples.
- 3) Network can be classified either by the type of transmission technology or by scale. Describe each class and give practical examples of each network.
- 4) With the help of diagrams, discuss some common network topologies.
- 5) OSI comprises a set of recommendations for identifying conceptual protocol layers necessary in every open communication network. Discuss the requirement of a layered protocol architecture in open systems.
- 6) The OSI model has seven layers, explain the purpose and function of each layer.
- 7) The TCP/IP model is another form of layered architecture. Describe the function of each layer.
- 8) Explain the basic purpose of a protocol and the relation between the protocol layers at the interface.
- 9) Outline the differences between a connection oriented and a connectionless oriented service, giving examples of each.
- 10) WLANs find four applications, discuss each application giving practical examples of each.
- 11) Wireless LANs can be divided into three categories: Infrared, Spread Spectrum, and Narrowband. Discuss.
- 12) Describe the 802.11 wireless LAN layered protocol.
- 13) There are two types of switching networks: circuit switching and packet switching. Describe how each system transfers data from one host to another.
- 14) Describe how a point-to-point protocol link is established, used, and terminated.
- 15) Describe the three classes of IP addresses and explain how routers interpret this address.

- 16) Explain why the IP address needs to be mapped to a physical address and how this is done.
- 17) Describe the IP Datagram and how this is fragmented when the datagram needs to traverse a network that has a smaller maximum transfer unit.
- 18) Specify the TCP layer and explain the TCP sliding window mechanism.
- 19) Describe the TCP segment format and how a connection is established and terminated.
- 20) Describe Table-Driven IP routing and Next-hop routing.