CS 164 – COMPUTER NETWORKS
Assignment 1

• Read the assigned chapters.
  o 1.2: Requirements
    ▪ Connectivity (1.2.1): nodes, links, circuit-switched vs. packet-switched networks, internetworking
    ▪ Cost-Efficient Resource Sharing (1.2.2): Multiplexing: TDM, FDM, Statistical multiplexing
    ▪ Support for Common Services (1.2.3): Logical channels, message stream channels, request/reply channels, bit-error vs. burst-errors.
  o 1.3: Network Architecture
    ▪ Layering and Protocols (1.3.1): Layering, protocol specification, interoperation of protocols, encapsulation/decapsulation, multiplexing/demultiplexing
    ▪ OSI Architecture (1.3.2)
  o 1.4: Implementing Network Software
    ▪ Application Programming Interface & Sockets (1.4.1)
    ▪ Example Application (1.4.2)
  o 1.5: Performance
    ▪ Bandwidth and Latency (1.5.1): Bandwidth, throughput, Round-Trip Time (RTT), Propagation Delay

• Answer below questions briefly. (Each is 20%).

  1. What are types of switched networks? What are their differences?
  2. What are the differences between unicast/ multicast/ broadcast?
  3. What’s API? What is its duty?
  4. What are the 7 layers of OSI network model?
  5. What is the bandwidth of a frequency band ranging from 200 to 800 Hz?