Course Code: CIT 852

Course Unit: 3

Course Title: Data Communication and Networks

Instruction: Answer Question One and Any Four Other Questions

Time Allowed: 2 ¹ᐟ²

1a.   Explain the TCP/IP reference model in detail.
      6 marks

b.   Differentiate between Client/Server and Peer-to-Peer Architecture.
          4 marks

c.   List three methods of framing
      3 marks

d.   Define Cryptography
      3 marks

e.   Write a short note on VPN, List the types of VPN.
          6 marks

2a.   Enumerate three major advantages of networks
          1½ marks

b.   Describe the three major problems transmission lines suffer from.
              6 marks

c.   Explain the following terms

i. Simplex   ii. Half-Duplex   iii. Full Duplex
     4½ marks

3a.   what are the drawbacks of TCP/IP model?
     3 marks

b.   Differentiate between Synchronous and statistical Time Division Multiplexing
     3 marks

c.   Write a short note on Wireless LAN
     3 marks

d.   What are the disadvantages of using radio transmitters
     3 marks

4a.   Define the following terms

i. Bandwidth   ii. Frequency   iii. Parity Bits   iv. Stop bit(s)
     6 marks

b.   Explain Reverse path forwarding   3 marks

c.   differentiate between open and closed loop congestion control algorithms
     3 marks

5a.   Enumerate three typical characteristics of a Metropolitan Area Networks
     3 marks

b.   Describe the two basic approaches to switching
     5 marks

c.   Why is DLL divided into two sub layers? What are the key functions of those sub layers?

     4 marks

6a.   What is the difference between the bit rate and the baud rate?
     2 marks

b.   describe any two types of error may occur during transmission over the network   3 marks

c.   Which of the following protocols are connection-less services

i. IP   ii. TCP   iii. UDP
     3 marks

d. differentiate between IP address and MAC address
4 marks