

Question 1

Using a diagram, describe the OSI seven layer model.

(20 marks)

Question 2

a) Using an illustration describe any three (3) network topologies you know stating their major advantage. **(12 marks)**

b) Name and provide a brief description of the main protocols found at the Transport layer of the TCP/IP model. **(8 Marks)**

[Total: 20 Marks]

Question 3

a) Explain the following networking terms:

- i) Attenuation
- ii) Cross Talk
- iii) EMI
- iv) Noise

(2 marks each)

b) Describe the function of the following networking devices and the layer at which they are used in the OSI model.

- i) Router
- ii) Bridge
- iii) NIC
- iv) Repeater

(3 marks each)

[Total: 20 Marks]

Question 4

a) Compare and contrast between Packet switching and circuit switching in computer networks. **(8 Marks)**

b) Summarise the following types of networking technologies

- i) ATM
- ii) ISDN
- iii) SONET

(4 marks each)

[Total : 20 marks]

Question 5

Distinguish the following terms

- i) Public and Private IP address
- ii) Routing and routed protocol
- iii) Intranet and Extranet
- iv) Internet and World Wide Web
- v) Guided and unguided media

(4 marks each)

[Total: 20 marks]

Question 6

- a) Compare the two error detection schemes: *Parity check* and *Cyclic Redundancy Check* **(8 Marks)**
- b) Describe the classes of IP addresses giving the range for each class. **(12 marks)**

[Total: 20 Marks]

Question 7

- a) Identify and describe the functions the two sub layers of the data link layer **(8 Marks)**
- b) Outline the uses of the following protocols
 - i). ICMP
 - ii) FTP
 - iii) TELNET
 - iv) Trace route
 - v) SNMP
 - vi) TLS/SSL

(2 marks each)

[Total: 20 Marks]