



NATIONAL OPEN UNIVERSITY OF NIGERIA
SCHOOL OF SCIENCE AND TECHNOLOGY

Course Title: CIT852: Data Communication and Networks

Instruction: Attempt any five (5) questions

Credit Unit: 3

Time: 3hrs

Question 1

- a) What is a Computer Network? **(5 marks)**
- b) Computer networks are generally classified according to their structure and the area they are localized in as;
 - a) LAN **(3 marks)**
 - b) MAN **(3 marks)**
 - c) WAN **(3 marks)**

Write briefly on these three classifications.

- c) What is wireless Network? **(6 marks)**

Question 2

- a) Write short notes on the following;
 - i) Topology **(4 Marks)**
 - ii) Protocol **(4 Marks)**
 - iii) Computer Network Architecture **(4 Marks)**
- b) Enumerate the advantages and disadvantages of the Ring Topology **(8 Marks)**

Question 3

- a) List the Layers of OSI reference Model in the right order. **(31/2 Marks)**
- b) Write briefly on all the layers of the OSI reference Model **(101/2 marks)**
- c) Contrast between OSI reference Model and TCP/IP Reference Model **(6 Marks)**

Question 4

- a) What is Data Transmission? **(5 Marks)**
- b) Contrast between the following;
 - i) Parallel and Serial Communication. **(5 Marks)**
 - ii) Asynchronous, Synchronous and Isochronous Communication. **(5 Marks)**
 - iii) Simplex, Half duplex and Full duplex Communication. **(5 Marks)**

Question 5

- a) What is Cryptography? **(5 Marks)**
- b) Define the Star Topology. **(5 Marks)**
- c) Enumerate the advantages and disadvantages of the Star Topology. **(10 Marks)**

Question 6

- a) What is a Network loop? **(10 marks)**
- b) Some networks contain more than one bridge, which increases the likelihood of networking loops. What is the solution to networking loops? **(10 marks)**

Question 7

- a) What are Transparent Bridges **(4 marks)**
- b) What is Congestion Flow? **(4 marks)**

c) Contrast between Congestion Control and Flow Control (**12 marks**)