

**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI, ABUJA**  
**FACULTY OF SCIENCES**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**2021\_1 EXAMINATIONS**

**COURSE CODE: CIT722**

**COURSE TITLE: COMPUTER NETWORKS**

**COURSE CREDIT: 3 UNITS**

**TIME ALLOWED: 2½ HOURS**

**INSTRUCTION: ANSWER QUESTION 1 AND ANY OTHER FOUR (4) QUESTIONS**

**QUESTION**

**Question One (22 marks)**

1a) Briefly analyse each of the following as it relates to computer networks:

- i. Workgroup computing (1mk)
- ii. Resource sharing (1mk)
- iii. File sharing (1mk)
- iv. File servers (1mk)
- v. Workstations (1mk)

1x 5 = 5mks

1b. Identify and describe briefly any three (3) types of error reporting messages. (9mks)

1c. State the four (4) layers of the TCP/IP reference model. (3mks)

1d. What is troubleshooting? (1mk)

1e. Enumerate any four (4) reasons why a network may not work. (4mks)

**Question Two (12marks)**

2a. How were computers made compatible for the services of the telephone system? (1mk)

2b. Briefly describe this solution as given in (2a) above. (5mks)

2c. Briefly describe the process of multiplexing. (4mks)

2d. Identify the problems faced in communication. (2mks)

**Question Three (12marks)**

3a. Briefly compare Operating Systems and Network Operating System. (3mks)

3b. Summarize the advantages and disadvantages of a peer to peer network. (4mks)

3c. In a tabular form, summarize the three (3) disadvantages of star and tree topologies. (3mks)



3d. State the four (4) major Network Access Providers that the National Science Foundation awarded contracts to in the 80's. **(2mks)**

**Question four (12marks)**

**4a. With respect to network protocol, write short notes on the following:**

- i. An entity **(1mk)**
- ii. Syntax **(1mk)**
- iii. Semantics **(1mk)**
- iv. Timing **(1mk)**

4b. The NetBIOS supports three (3) services, enumerate them. **(3mks)**

4c. Itemize and describe briefly the two (2) types of Internet Control Message Protocol (ICMP). **(3mks)**

4d. Discuss briefly the Trivial File Transfer Protocol (TFTP). **(2mks)**

**Question Five (12marks)**

5a. Identify any three (3) major functions of the Network Interface Card (NIC). **(6mks)**

5b. Briefly distinguish between throughput and bandwidth as used in LAN. **(3mks)**

5c. Outline the three (3) major differences between WAN and LAN topologies. **(3mks)**

**Question Six(12marks)**

6a. Itemize the three (3) types of Ethernet cables available. **(3mks)**

6b. Enumerate the four (4) common features of fiber optic cable. **(4mks)**

6c. Elucidate on Ethernet addressing **(3mks)**

6d. State the two (2) IP addressing schemes. **(2mks)**