



**NATIONAL OPEN UNIVERSITY OF NIGERIA  
14-16 AHMADU BELLO WAY, VICTORIA ISLAND LAGOS  
MARCH/APRIL 2016 EXAMINATION**

**SCHOOL OF SCIENCE AND TECHNOLOGY**

**COURSE CODE:** CIT722  
**COURSE TITLE:** COMPUTER NETWORKS

**Time:** 3 HOURS

**INSTRUCTION:** *Answer any five questions.*

1.
  - a) Explain briefly what a modem is and describe its role in the networking of computers using telephone lines.
  - b) Briefly describe what multiplexing is and explain its role in broadband communication.
  - c) Write short notes on the following types of network:
    - i. Wide Area Network WAN
    - ii. Metropolitan Area Network MAN
    - iii. Local Area Network LAN
2.
  - a) List five benefits of computer networking.
  - b) Write a brief note on each of the following:
    - i. File server
    - ii. Workstation
    - iii. Network interface card
    - iv. Switch
  - c) Distinguish between a bridge and a repeater.
3.
  - a) Explain clearly what a network operating system is giving two examples.
  - b) Distinguish between peer-to-peer and client/server networks listing at least two advantages and two disadvantages of each type.
  - c) Distinguish between MAN and WAN.
4.
  - a) Using sketches, describe the three main types of physical topologies used for networking computers.

- b) Briefly explain what network protocol is and list its three key elements.
  - c) Using a sketch describe the TCP/IP reference model.
- 5.
- a) Distinguish between user datagram protocol (UDP) and transmission control protocol (TCP).
  - b) Write brief notes on each of the following:
    - i. Post office protocol (POP3)
    - ii. Simple mail transfer protocol (SMTP)
  - c) Distinguish between fast Ethernet and Gigabit Ethernet.
- 6.
- a) Briefly describe the following transmission techniques:
    - i. CSMA
    - ii. CSMA/CD
  - b) Write a brief note on each of the following:
    - i. Address resolution protocol (ARP)
    - ii. Internet control message protocol (ICMP)
  - c) Distinguish between MAC address and IP address.
- 7.
- a) Using a sketch describe the OSI reference model pointing out the main task of each layer.
  - b) Write brief notes on the following:
    - i. PSTN
    - ii. ISDN
  - c) Distinguish between X.25 and frame relay.