



**National Open University of Nigeria**  
**Plot 91, Cadastral Zone, Nnamdi Asikiwe Expressway, Jabi – Abuja**  
**FACULTY OF COMPUTING**  
**2024\_2 EXAMINATION**

**COURSE CODE: CIT 722**

**COURSE TITLE: COMPUTER NETWORKS**

**CREDIT: 3 Units**

**TIME ALLOWED: 3 Hours**

**INSTRUCTION: Question ONE is compulsory and any other three (3) questions**

**Question One**

- 1a. i. Communication has gone through several phases of development. Elaborately describe the developments in communication. [5 marks]
- 1a. ii. Elaborately discuss the workstations as a networking hardware. [2 marks]
- 1a. iii. What does the network interface card (NIC) provide? [1 mark]
- 1b. i. In the context of circuit switching, what is “blocking”? [2 marks]
- 1b. ii. With the aid of a detailed diagram describe a Networking Hardware showing all the associated components. [5 marks]
- 1c. i. Write a short note on *performance* as a key issue that must be trashed out very carefully before we for a computer network [2 marks]
- 1c. ii. To the best of your ability, define a Computer Network. [3 marks]
- 1d. i. Exclusively discuss the term Switch as a key Networking Hardware [5 mark]

**Question Two**

- 2a. i. Enumerate five (5) advantages and three (3) disadvantages of Client-Server Network. [8 marks]
- 2a. ii. What is the most commonly used topology in the world of computer networking? [1 mark]
- 2b. i. What does protocol mean in computing? [1 mark]
- 2b. ii. Adequately discuss the following protocols. [5 marks]
- i. Address Resolution Protocol
  - ii. Reverse Address Resolution Protocol

**Question Three**

- 3a. i. With the aid of an appropriate and well labeled diagram, illustrate the conceptual flow of bits across an Ethernet [4 marks]
- 3a. ii. State the key disadvantage of a physically direct-wired LAN and explain how a star-wired LAN remedies this disadvantage. [2 marks]

- 3b. i. State five (5) vivid examples of an Error Reporting Message. **[4 marks]**  
3b. ii. From users' point of view, what is the only interesting aspect about protocols? **[2 marks]**  
3b. ii. What is the Asynchronous Transfer Mode (ATM) **[3 marks]**

#### **Question Four**

- 4a. i. Enumerate the three (3) advantages and three (3) disadvantages of the Star topology **[6 marks]**  
4a. ii. What are the key elements of a protocol? **[3 marks]**  
4b. i. Explain Carrier Sense on a Multi-Access Network (CSMA). **[4 marks]**  
4b. ii. In the client/server network model, how is the central computer described and what name is given to every other devices connected to this central computer? **[2 mark]**

#### **Question Five**

- 5a. i. What are two (2) ways that protocols can be implemented? **[2 marks]**  
5b. ii. Enumerate six (6) Basic Properties of a Protocol. **[3 marks]**  
5b. i. What is a protocol in Data Communication? **[1 mark]**  
5b. ii. Describe the Physical Layer of the OSI Model. **[2 marks]**  
5b. iii. Discuss the History of Ethernet. **[4 marks]**