



**NATIONAL OPEN UNIVERSITY OF NIGERIA**  
**University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja**  
**FACULTY OF SCIENCE**  
**DEPARTMENT OF COMPUTER SCIENCE**

**CIT 854: NETWORK PROGRAMMING AND DESIGN**

**Instruction:** Answer Question (1) (22 marks) and any other four questions each carrying 12 marks  
**Time:** 2½ hours

- 1 (a) List and explain the criteria for network addressing **(10 marks)**  
b) Briefly describe the key elements of network management system? **(8 marks)**  
c) Enumerate reasons why UDP would be preferable to TCP and give examples of applications that are better suited for UDP in each case. **(4 marks)**
  
- 2a) State the critical role the network operating system (NOS) play in a networking architecture? **(6 marks)**  
b) Enumerate what you understand by “Network Management”. State its functional areas **(6 marks)**
  
- 3a) Write short notes on User Datagram Protocol (UDP). **(8 marks)**  
b) Enumerate the features provided by the UDP datagram **(4 marks)**
  
- 4) Write short notes on the following network devices:
  - a) Repeater **) 6 marks**
  - b) Switches **) 6 marks**
  
- 5a) State and briefly describe any three routing algorithm attributes **) 6 marks**  
b) Briefly discuss Routers stating their special features **(6 marks)**
  
- 6a) What is Internet Protocol? **) 2 marks**  
b) State any five fields of the IP packet and their respective functions. **(10 marks)**
  
- 7a) Write short notes on User Datagram Protocol (UDP). **(8 marks)**  
b) Enumerate the features provided by the UDP datagram **(4 marks)**