NATIONAL OPEN UNIVERSITY OF NIGERIA
University Village, 91 Cadastral Zone, Nnamdi Azikwe Expressway, Jabi, Abuja
FACULTY OF SCIENCES
COMPUTER SCIENCE DEPARTMENT
2020_2 EXAMINATIONS ₁₂₄

COURSE CODE: CIT854:
COURSE TITLE: NETWORK PROGRAMMING AND DESIGN
Credit: 3 units
TIME ALLOWED: 2½ Hours
INSTRUCTION: Answer Question 1 and any other FOUR (4) Questions

1a) Briefly Name and describe three key element of a network management system *(6 marks)*
1b) Explain the following generic socket options.
    i). SO_BROADCAST Socket Option   *(2 marks)*
    ii). SO_DEBUG Socket Option   *(2 marks)*
    iii). SO_DONTROUTE Socket Option   *(2 marks)*
1c) State any four fields of the IP packet and their respective functions. *(8 marks)*
1d). List the four symptoms that may be associated with the Network cabling. *(2 marks)*

2a) What is Network Interface Card (NIC). *(2 marks)*
2b) Write a short note on the following
    i). Fibre Optic Cable   *(2 marks)*
    ii). Twisted Pair Cable   *(2 marks)*
    iii). Coaxial Cable   *(2 marks)*
2c) State four consideration in planning a cabling system   *(4 marks)*
3a) Describe three routing algorithm attributes.   *(6 marks)*
3b) Discuss the importance of switches in a network   *(6 marks)*

4a) Discuss five criteria for network addressing (**10 marks)**
4b) Describe switching?   *(2marks)*

5a) State four disadvantages of bus topology.   *(2 marks)*
5b) Enumerate four tools that are commonly used in network troubleshooting   *(6 marks)*
5c). Highlight the steps to investigate network problems.   *(4 marks)*
6a) Complete the following table of Internet applications and their underlying transport protocols:

S/N	Application	Application-layer Protocol	Underlying Transport

			Protocol
1.	Electronic mail		
2.	Remote terminal		
3.	Web		
4.	File transfer		
5.	Remote file server		
6.	Streaming multimedia		
7.	Internet Telephony		
8.	Network management		
9.	Routing Protocol		
10	Name Translation		

(10 marks)

6b) What is Internet Protocol?   *(2 marks)*