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

CIT 854: NETWORK PROGRAMMING AND DESIGN   **Credit: 3 units**
TIME ALLOWED: 2½ Hours
INSTRUCTION: Answer Question 1 and any other FOUR (4) Questions

1a) With the aid of relevant diagrams and examples, identify the different modes of data transmission you know. *(6 marks)*
b). Relate the importance of nodes, links and modem in a network. *(6 marks)*
c) Define Internet Protocol?   *(2 marks)*
d) In a tabular form relate the various classes of Network with their respective IP address
 (4 marks)
e) Network cabling is the most common source of problems on a network. List the four symptoms that may be associated with the cable plant.   *(2 marks)*
f) Identify four advantages of star topology. *(2 marks)*

 2a) What do you understand by network topology? *(3 marks)*
b) Using diagrams only, illustrate the following: *(2 marks each. Total = 6 marks)*
        (i) Star topology   (ii) Bus topology   (iii) Ring topology.
b)Write any four guidelines for network addressing. State the justification for each guideline where necessary *(6 marks)*

3a) Define the term "IP Address". *(2 marks)*
b) Identify three benefits of sub-netting in networks *(3 marks)*
c) Relate three tasks performed by the internet control message protocol (ICMP) *(3 marks)*
d) From your own perspective, outline the parameters under which the activities going on in a network can be monitored. *(4 marks)*

4a) Summarise the guidelines for allocating switch port. *(3 marks)*
b) Relate five advantages of using bridges in a network? *(5 marks)*
c) List four key elements of Network Management System. *(4 marks)*

5a) Write short notes on Twisted pair cable. *(3 marks)*
b) In logical order, write the steps you will follow to investigate and isolate Network Problems? *(7 marks)*
c) Using diagram only, show a TCP (transmission control protocol) client-server along with the functions used for input and output

6a) Summarise three ways to get the options that affect a socket *(3 marks)*
b) Describe the uses of the following network troubleshooting tools
        i) Time-Domain Reflectometers (TDRs). *(3 marks)*
        ii) Cable Tester (Scanner) . *(3 marks)*
        iii) MAU Analyser. *(3 marks)*