



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)**