NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-
ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
2024_1 EXAMINATION_

COURSE CODE : CIT 854
COURSE TITLE : Network and Programming Design
CREDIT UNIT : 3
TIME ALLOWED : 2½ HOURS
INSTRUCTION   : Answer Four Questions in ALL. Question 1 is compulsory

1. a) Explain the following with respect to DNS
        i). PTR ii) MX iii) CNAME   *[6 marks]*
   b) Give highlight on the following network classes:
        i) Class A, ii) Class B, ii) Class C, ii) Class D, iii) Class E   *[5 marks]*
   c) Using diagrams only, compare between the internet model and OSI reference model *[4marks]*
   d) What are the necessary guides to consider when planning a cabling system *[4marks]*
   e) Briefly explain the internal structure of the coaxial cable *[4 marks]*
   f) Describe the mode of data transmission you know *[2 marks]*

2. a) Give detailed explanation of **SO_BROADCAST** Socket Option *[5 marks]*
   b) Enumerate the advantages and disadvantages of bus topology [5marks]
   c) Give a suitable description of a Node? Explain how a node can be connected to a Computer Network (5Marks)

3. a) State the Three conditions that are handled str_cl i Function *[6 marks]*
   b) Using formula only, explain Shannon's law *[5 marks]*
   c) What is the specific function associated with the SO_DEBUG socket option? *[4 marks]*

4. a) State 3 points about signal handling on a Posix-compliant system. *[6 marks]*
   b) Write short notes on Virtual Local Area Network. *[5 marks]*
   c) State the practical guidelines for deciding between routing and bridging in a network environment? *[4 marks]*

5. a) Highlight the responsibilities of the IETF (Internet Engineering Task Force) in the field of networking? *[6 marks]*
   b) State the two queues use for kernel maintains with respect to listening socket *[4 marks]*
   c) Describe the advantages and disadvantages of Start Topology *[5 marks]*

6. a) List the layers of OSI Model that you know. *[3½marks]*
   b) Enumerate the indicators of router malfunctions *[5 marks]*
   c) State the functions of the following [6½ marks]
   i) bus ii) data Links iii) Parallel links iv) Serial links v) Network Shell vi) CSMA/CD