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

2025_2 EXAMINATIONS

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 Star 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	iv) Serial links
ii) data Links	v) Network Shell
iii) Parallel links	vi) CSMA/CD