NATIONAL OPEN UNIVERSITY OF NIGERIA

University Village, Plot 91, Cadastral Zone, NnamdiAzikiwe Express Way, Jabi, Abuja

Faculty of ScienceS

CIT 723: OPERATING SYSTEM DESIGN AND PROGRAMMING
Instruction: *Answer Question (1) (25 marks) and any other three questions each carrying 15 marks*

Credit Units: 2   **Time:** *2½ hours*

1. (a) Briefly explain what you understand bynetwork architecture?*(3 marks)*
(b) What are protocols?   *(2 marks)*
(c) Enumerate the three points to keep in mind when you think about protocols in a network environment*(6 marks)*
(d) State thebenefits of networking. *(5 marks)*
e) What are network protocols? *(2 marks)*
f) State the file types that uses the following typical extensions: *(3 marks)*
    i)   .ps
    ii)   .mpg
    iii)   .dvi
    iv)   .jpg
    v)   .gif
    vi)   .pdf
g) State the advantages and disadvantages of Peer-to-peer network   *(4marks)*

2a) What do you understand by OSI reference model? Diagrammatically represent itslayers.
      (5 marks)
b) Write short notes on the first three layers of the OSI layers *(10 marks)*

3a) Briefly describe how protocols work.*(7 marks)*
b) Enumerate the steps taken by the protocols at both the sending and receiving computer. *(4marks)*
c) State any three advantages and one disadvantage of Linux operating system. *(4marks)*

4a) Write short notes on the following:
    i)   User Datagram Protocol (UDP)   *(5 marks)*
    ii)   Internetwork Packet Exchange and Sequenced Packet Exchange (IPX/SPX)*(5 marks)*
    iii) Media Access Protocols   *(5 marks)*

5) Describe the architecture of the Linux operating system enumerating its various components*(15 marks)*

6a) Explain CRC error checking*(3 marks)*
b) Write short notes on the following:
    i)   Protocol Stacks   *(2 marks)*
    ii)   The Binding Process   *(4 marks)*
c) Describe Network Load Balancing*(6marks)*

7. (a)   Write short notes on the following describing and stating their functions:
  i) Internet Protocol (IP)*(6 marks)*
  ii)   Transmission control protocol (TCP). *(6 marks)*
b) State the advantages of Server-Based Network*(3 marks)*