



NATIONAL OPEN UNIVERSITY OF NIGERIA
PLOT 91, CADASTRAL ZONE, NNAMDI AZIKWE EXPRESSWAY, JABI-ABUJA
FACULTY OF SCIENCES
DEPARTMENT OF COMPUTER SCIENCE
SEPTEMBER 2020_1 EXAMINATIONS

COURSE CODE: CIT 311

COURSE TITLE: COMPUTER NETWORKS

CREDIT: 3 UNITS

TIME ALLOWED: 2½ HOURS

INSTRUCTIONS: ANSWER QUESTION ONE (1) AND ANY FOUR (4) OTHERS

- 1(a) What is computer network? *(2 marks)*
- 1(b) Why is computer network necessary in Communication? *(4 marks)*
- 1(c) Differentiate between OSI Reference Model & TCP Reference Model. *(4 marks)*
- 1(d) With example each, classified transmission media. *(3 marks)*
- 1(e).What is Multiplexing? *(2 marks)*
- 1(f). Outline three services provided by the Logical Link Layer. *(3 marks)*
- 1(g) Explain integrated services in ISDN. *(4 marks)*
- 2(a) As a computer network engineer, a company whose head and sub offices spread within a geographical area of 50km. Which of the network topology will be more appropriate to recommend to the company and why? *(3 marks)*
- 2(b) Outline the seven layers of the OSI model reference *(3 marks)*.
- 2(c) i. When does congestion occur in the network? *(2 marks)*
ii. Explain ISDN *(3 marks)*
- 2(d) Why was Spanning tree protocol developed *(1 mark)*
- 3(a) i. Outline the generic application of computer network *(3 marks)*
ii. State the main Objectives of OSI Reference Model? *(4marks)*
- 3(b) i. When is transmission said to be simplex, half duplex, and Full duplex *(3 marks)*
ii. Data Link Layer is divided into two sub layers, explain. *(2 marks)*
- 4(a) i. In Static Algorithm, explain flooding? *(2 marks)*
ii. Express 4 typical routing protocols and their associated network operating systems? *(4 marks)*
- 4(b) i. What is Congestion? *(2 marks)*
ii. Inside the subnet, several trade-offs exist between virtual circuits and datagrams, discuss two of them? *(4 marks)*
- 5(a) i. Report four functions of repeaters? *(4 marks)*
ii. Briefly explain upward and downward multiplexing *(4 marks)*
- 5(b) i. Briefly examine the need for multiplexing. *(2 marks)*
ii. Differentiate between a router and a bridge *(4 marks)*

- 6(a) i. Discuss in details the Domain Name System (DNS). (**4 marks**)
ii. Explain the term: Transmission Control Protocol (TCP) (**2 marks**)
- 6(b) i. Write short notes on the following
Repeaters
Switches
Bridges and
Hubs (**4 marks**)
ii. Explain the Importance of bridges and routers in a network? (**2 marks**)