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)***