FEDERAL UNIVERSITY OF TECHNOLOGY, MINNA

SCHOOL OF INFORMATION AND COMMUNICATION TECHNOLOGY

DEPARTMENT OF INFORMATION AND MEDIA TECHNOLOGY

SECOND SEMESTER 2017/2018 EXAMINATION

COURSE CODE:	CIT 322
COURSE TITLE:	Practical Computer Networks
CREDIT UNITS:	3
TIME ALLOWED:	2 Hours
COURSE LECTURER(S):	Dr H. O. Aliyu & Y.M. Sani
NUMBER OF QUESTIONS:	4
NUMBER OF PAGES:	2

INSTRUCTIONS

- Answer all questions
- Do **not** use red pen
- Please use a clear handwriting
- This exam is closed book, closed notes, closed laptop and closed cell phone
- Do **not** use calculators

Questions 1:

Imagine that a company with eight departments is given a network address 172.20.0.0/16

a. Determine the mask that could be applied to the department's network to provide the subnetting necessary to divide up the network equally among the departments? **(2 marks)**

b. For each of the subnets created by the mask in (a), fill the table below:

Network Address	Range of host addresses	Broadcast address	Maximum number of devices that can be accommodated

(8 marks)

Questions 2:

a. When Joshua and Jackson are communicating using the email software on their digital devices, use the OSI reference model to describe the different stages of data communication between the devices. Briefly explain what is happening at each layer and the protocols involved **(7 marks)**

b. Compare the OSI and TCP/IP models **(3 marks)**

Question 3:

a. Describe stop-and-wait flow control? **(2 marks)**

b. What are reasons for breaking a long data transmission up into a number of frames? **(2 marks)**

c. List and briefly explain all requirements for effective communications over a data link? **(6 marks)**

Question 4:

a. What are the four generic architectural components of a public communications network? Define each term. **(4 marks)**

b. What are the advantages of packet switching compared to circuit switching? **(2 marks)**

c. How does frame relay differ from X.25? **(2 marks)**

d. What is the primary cause of signal loss in satellite communications? **(2 marks)**

Best of Luck!