

TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT

Office of the Dean

Full Marks: 40
Time: 2 hrs.

2013

BIM/Second Semester/ ITC 214: Data Communication and Computer Network

Candidates are required to answer all the questions in their own words as far as practicable.

Group “A”

1) Brief Answer Questions:

[10x1=10]

- i. Difference between the term bit rate and baud rate.
- ii. List basic characteristics of signal.
- iii. State Shannon capacity theorem.
- iv. What is the purpose of bridge in a LAN?
- v. Define Asynchronous communication.
- vi. List down the various advantages of digital transmission over analog transmission.
- vii. What is socket address? Give example.
- viii. Differentiate between Packet Switching and Circuit Switching.
- ix. What is the necessity of Port address even if there is IP address for the device?
- x. Define routing protocol.
- xi. What is the role of DNS?

Group “B”

Short Answer Questions:

[5x6=30]

- 2) a. What are the factors that determine whether a communication system is a LAN, MAN or WAN?
b. If SNR is 40db and bandwidth is 3.6KHZ calculate theoretical information rate.
- 3) a. Explain TCP/IP Reference Model and the function of its various layers.
b. Why is CSMA/CD not suitable for wireless LANs? Describe one suitable MAC protocol for wireless LANs.
- 4) a. Differentiate GO-Back N and selective repeat ARQ.
b. If an institution has IP address 198.167.45.0 and it needs 6 subnets. Answer the following:
 - i. Which class does this IP belong to?
 - ii. How many valid hosts are available in each subnet?
 - iii. Calculate the subnet mask of given IP.
- 5) a. In which case do you prefer TCP over UDP? Explain in detail.
b. What is the role of DHCP server? Explain its working.
- 6) a. Define adaptive and non adaptive routing algorithms. Explain shortest path algorithm with example.
b. Differentiate between Slotted ALOHA and pure ALOHA