TRIBHUVAN UNIVERSITY
FACULTY OF MANAGEMENT
Office of the Dean

**Full Marks: 40**
**Time: 2 hrs.**

**2014**

**BIM / Second Semester / IT 214: Data Communication and Computer Network**

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

## Group "A"

1. ***Brief Answer questions:*** *[10 × 1 = 10]*

   i. Why signals are modulated before transmission?
   ii. What are the advantages of using optical fiber?
   iii. What is the purpose of piggybacking?
   iv. How does ARQ correct errors?
   v. Which multiplexing is preferred in digital transmission and why?
   vi. Why ARP protocol is required?
   vii. What is the function of TTL field?
   viii. Why do you do CIDR?
   ix. Which protocols and respective ports are used for sending and receiving emails?
   x. List the various ranges of private IP address.

## Group "B"

***Short Answer Questions:*** *[5 × 3 = 15]*

2. Describe the basic model of communication.
3. What frame will be transmitted for the data D=11000011 using the divisor polynomial $x^3 + 1$ for CRC?
4. Explain and describe NAT.
5. Differentiate between Selective Reject ARQ and Stop and Wait ARQ?
6. Describe Distance Vector Routing Algorithm and differentiate it with shortest path routing algorithm.

## Group "C"

***Long Answer questions:*** *[3 × 5 = 15]*

7. Which random access method is used in Ethernet? Explain its working principle.
8. What is an IP address? Explain IPv4 header with diagram.
9. Which protocol does DHCP use? Explain working principle of DHCP with diagram.