TRIBHUVAN UNIVERSITY

FACULTY OF MANAGEMENT

Office of the Dean

Full Marks: 40

Time: 2 hrs

August 2021

BIM / Second Semester/ITC 214/IT 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:* *[10 x 1 = 10]*
   i. What is the advantage of Analog signal transmission as compare to digital signal transmission?
   ii. Mention any two protocols of the Network Layer.
   iii. What is the problem of Character Count Method of Framing?
   iv. Differentiate between Persistent and Non-Persistent CSMA.
   v. Why we need additional resources such as CPU, Memory in case of adaptive routing as compare to Non Adaptive routing?
   vi. Mention any two advantages of IPV4 over IVP6.
   vii. Mention any two application of UDP.
   viii. How the security is assure in HTTPS while comparing with HTTP?
   ix. What is the technological improvement in 4G comparing with 3G?
   x. Mention the advantage of Wireless Communication over Wired Communication.

Group "B"

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

2. Encode digital data 11001011 using NRZ-I, Manchester and Frequency Shift Keying encoding techniques.
3. If you need to send 200kbps over a noiseless channel with a bandwidth of 20khz. How many signal levels do we need?
4. Explain the working Principle of Medium Access control protocol used in Wi-fi.
5. Illustrate TCP header format.
6. Explain the packet switching principle.

Group "C"

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

7. Mention the advantage of Flooding routing algorithm. Explain the techniques that are used to control the duplication of packets in Flooding routing algorithm.
8. ABC organization owns IP address 205.206.207.0. This organization have "N" number of department where each department consists of "60" number of host now perform subnetting and identify the following

   a. Subnet Mask

   b. Number of Subnet

   c. Network address and broadcast address of each subnet
   d. Range of usable IP's in each subnet

   c. Total number of IP wastages.

9. Why flow control is necessary? Explain the techniques of flow Control.