

H/8 2018

TRIBHUVAN UNIVERSITY  
FACULTY OF MANAGEMENT  
Office of the Dean  
Sept. - Oct. 2018

Full Marks: 40  
Pass Marks: 20  
Time: 2 hrs.

**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. The figures in the margin indicate the full marks.*

**Group "A"**

**1. Brief Answer questions:**

**[10 × 1 = 10]**

- i. Why there is a bandwidth wastage in Frequency Division Multiplexing?
- ii. Which layer is responsible for name recognition and security?
- iii. How the problem of frame duplication is solved in Stop and Wait protocol?
- iv. Differentiate between Logical and Physical Topology.
- v. Why Adaptive routing algorithm is less secure?
- vi. State any two improvements in IPV6 as compare to IPV4.
- vii. How the Crash Recovery is done in datagram subnet?
- viii. Differentiated between SMTP and POP.
- ix. What are the types of channels used in ISDN?
- x. What is the purpose of Keep Alive message in BGP?

**Group "B"**

**Short Answer Questions:**

**[5 × 3 = 15]**

2. Explain Time Division Multiplexing with its types.
3. For a Satellite TV Channel with Signal to Noise Ratio 30dB and range of frequencies 600hz, 800hz, 1.2 khz and 1.5khz, find maximum data rate.
4. Explain IPV4 header format with supportive diagram.
5. Explain the types of Datalink layer services provided to Network Layer.
6. Explain the access control protocol used in Ethernet based LAN Network.

**Group "C"**

**Long Answer questions:**

**[3 × 5 = 15]**

7. Explain any two major characteristics of UDP. If a data to be transmitted is 101001 and a divisor is 1101 then what will be the message to be send?
8. You are given an IP address 150.152.0.0. You need to subnet the given IP into Five different Departments. Perform Subnetting and find the Subnet Mask, Network Address, Broad Cast Address and Usable host addresses in all subnet.
9. Why Switching is necessary? Explain shortest path routing algorithm with example.

