

Tribhuvan University
Institute of Science and Technology
 2082
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Bachelor Level / Second Year/ Fourth Semester/ Science
Computer Science and Information Technology (CSC 258)
 (Computer Networks)
(OLD COURSE)

Full Marks: 60
 Pass Marks: 24
 Time: 3 hours.

Candidates are required to give their answers in their own words as far as practicable.
 All figures in the margin indicate full marks.

Section A

Long Answer Questions.

Attempt any TWO questions.

[2×10=20]

1. An organization is granted the block 192.168.0.0/18. The administrator wants to create 128 subnets.

 Find the following:
 - a. The subnet mask
 - b. The number of addresses in each subnet
 - c. The first and last addresses in subnet 1
 - d. The first and last addresses in subnet 128

[10]
2. Explain different channel allocation techniques with a suitable example. [10]
3. Define TCP. Explain the phases of connection-oriented transmission in TCP with required figures. [2 + 8]

Section B

Short Answer Questions

Attempt any EIGHT questions.

[8×5=40]

4. Describe the Stream Control Transmission Protocol. List two of its advantages and disadvantages. [5]
5. Compare and contrast the following email protocols: SMTP, POP3, and IMAP. [5]
6. Explain the concept of ports and sockets in the Transport Layer. [5]
7. What are router ACLs and how do they improve network security? [5]
8. Explain the working principle of CSMA/CD used in Ethernet networks. [5]
9. Explain the role of protocols and standards in computer networks. [5]
10. Differentiate between circuit switching and packet switching. [5]
11. List some features of IPv6. Explain the need for transitioning from IPv4 to IPv6. [2 + 3]
12. Write short notes on [2x2.5=5]
 - a) LAN
 - b) CRC