

FACULTY OF ENGINEERING
B.E. (CSE) V - Semester (AICTE) (Main & Backlog) (New) Examination, February/ March 2025

Code No: G-5171/N/AICTE

Subject: Computer Networks

Time: 3 Hours

Max. Marks: 70

- Note: (i) First question is compulsory and answer any four questions from the remaining six questions. Each question carries 14 Marks.
(ii) Answer to each question must be written at one place only and in the same order as they occur in the question paper.
(iii) Missing data, if any, may be suitably assumed.

1. a) Define data communication and its primary components.
b) List two examples of wired and wireless LAN.
c) Define piggybacking in flow control.
d) What is the difference between IPV4 and IPV6 headers?
e) Illustrate the elements of a transport protocol.
f) What is the role of DNS in the application layer?
g) Define symmetric encryption.
2. a) Describe the limitations of the OSI model and how the TCP/IP model addresses these limitations.
b) Compare asynchronous and synchronous transmission techniques.
3. a) Distinguish between Go-Back-N and Selective Repeat ARQ protocols.
b) Discuss CSMA/CD multiple channel access protocol.
4. a) Explain the tunnelling process in internetworking with an example.
b) Compare gateway protocols and unicast routing protocols.
5. a) Write a detailed note on congestion control in the transport layer.
b) Illustrate the working principle of TCP with a connection establishment and termination diagram.
6. a) Explain the various network security attacks and their mitigation strategies.
b) Describe the working principle of digital signatures and their role in ensuring data integrity.
7. a) Explain the working principle of firewalls and their importance in network security.
b) Differentiate between pure ALOHA and slotted ALOHA.