FACULTY OF ENGINEERING

B.E. (CSE) V - Semester (AICTE) (Main & Backlog) (New) Examination, February/ March 2024

Subject: Computer Networks

Max. Marks: 70

Time: 3 Hours

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 in the context of computer networks.
   b) What is the purpose of error detection and correction in the data link layer?
   c) What is packet switching and how does it differ from circuit switching?
   d) What is process-to-process communication in networking?
   e) Define the Domain Name System (DNS) in networking.
   f) Explain the concept of time division multiplexing.
   g) Describe the use of Bluetooth in network communication.

2. a) Analyze the differences between the OSI and TCP/IP models.
   b) Describe the various types of transmission media used in networking.

3. a) What is the principle of Sliding Window in network communication?
   b) Explain the concept of Pure ALOHA in multiple access protocols.

4. a) Explain the structure of the IPv4 header.
   b) Explain the concepts of leaky bucket and token bucket algorithms in congestion control.

5. a) Describe the key features of TCP as an Internet transport protocol.
   b) Explain the importance of QoS in networking.

6. a) Discuss the concept of network security attacks and the role of firewalls.
   b) Explain the significance of digital signatures in network security.

7. a) Illustrate the application of transport layer protocols in real-world scenarios.
   b) Discuss the principles and applications of CSMA/CD.

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