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B. Voc. (Software Technologies) (Sem – VI)
EXAMINATION NOVEMBER 2023
Computer Network

[Time: 2 Hours]   [Max. Marks: 60]

Instructions: 1. All questions are compulsory
                         2. Figures to the right indicate full marks
                         3. Draw neat sketches wherever necessary

Q1   Answer **any five** from the following.   5x2=10
   a. Explain Star Topology with its advantages & disadvantages.
   b. What is unguided media? Explain any one type of it.
   c. Write a note on WAN networks.
   d. Explain with an example two dimensional parity bit check.
   e. What are periodic Signals? How are they different from aperiodic signals?
   f. Why is classless Interdomain Routing better than classful routing?
   g. Given an IP address 24.56.119.6, Convert it to binary format. Also, identify the
      Class, Network IP Address, Direct broadcast address and Limited broadcast
      address.

Q2   Answer **any five** from the following.   5x2=10
   a. What is a Hub? Explain its advantages & disadvantages.
   b. Explain the following closed loop congestion control techniques.
      i)   Back Pressure
      ii)   Choke Packet
   c. What are non-adaptive algorithms? Explain its types.
   d. Explain the SCTP protocol in brief.
   e. What is Denial of Service attack in network.
   f. Differentiate between Encryption and Decryption.
   g. Explain Asymmetric Key Cryptography with a neat diagram.

Q3   A. What is a Reference Model? Explain the similarities & differences between its two   (5)
      types.

OR

   A. "Coaxial Cables are widely used in Television". Explain.   (5)
   B. What do you mean by CRC? How it detects the error? Explain, if the data & its   (5)
      given divisor polynomial are $X^7 + X^5 + 1$ and $X^3 + 1$.

Q4 A. Discuss sliding window protocol using selective repeat with an appropriate   **(5)**
        example.

OR

A. Explain IPV4 header in detail with a neat diagram & explain the following fields: **(5)**
    Total Length, Version, Fragment offset & TTL.

B. How error reporting is done by ICMP protocol. Explain in detail.   **(5)**

Q5 A. What is an IP address? How are IP addresses classified? What is the maximum   **(5)**
        numbers of networks possible in class 'C'? What are maximum number of hosts that
        can be connected in each class 'C' network?

OR

A. What are private addresses & how are they used in Network Address Translation   **(5)**
    (NAT)?

B. Distinguish between connection-oriented & connectionless services.   **(5)**

Q6 A. What is network security? What are the Qualities of a secure network?   **(5)**

OR

A. Explain types of cryptography techniques used in network security.   **(5)**

B. Give different methods in which congestion can be controlled in a network for   **(5)**
    virtual circuit.