**BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)**
**B. Tech. Sem - VI CS&BS : WINTER: 2025**
**SUBJECT: COMPUTER NETWORKS**

Day : Thursday
Date : 20/11/2025

**W-24181-2025**

Time : 02:30 PM-05:30 PM
Max. Marks : 60

**N.B.**

1) All questions are **COMPULSORY**.
2) Figures to the **RIGHT** indicate **FULL** marks.
3) Assume suitable data **WHEREVER** necessary.
4) Draw neat diagrams **WHEREVER** necessary.

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**Q.1** Compare and contrast wired LAN, wireless LAN, and virtual LAN technologies. **(10)**

**OR**

**Q.1** Write short note with diagram on **(10)**
**a)** Twisted Pair Cable
**b)** Coaxial cable
**c)** Optic Fiber Cable

**Q.2** Describe the operation of Slotted ALOHA and its advantages over Pure ALOHA.

**OR**

**Q.2** Describe the working principle of CRC in detail. A bit stream 1101011011 is transmitted using the standard CRC method. The generator polynomial is x4+x+1. What is the actual bit string transmitted? **(10)**

**Q.3** What is path vector routing? Discuss its advantages over Distance Vector routing. **(10)**

**OR**

**Q.3** Compare IPv6 and IPv4. Draw and explain IPv6 header format. **(10)**

**Q.4** Define TELNET and explain how it facilitates remote terminal access over a network. **(10)**

**OR**

**Q.4** Differentiate between persistent and non persistent HTTP. Also explain HTTP message format. **(10)**

**Q.5** What is Frequency division multiplexing? How does it work? How does it different from WDM and TDM. **(10)**

**OR**

**Q.5** Explain the concept of spread spectrum and discuss its role in enhancing communication security and reducing interference. **(10)**

**Q.6** Explain the security challenges associated with email communication and discuss techniques for securing email transmission. **(10)**

**OR**

**Q.6** Define cryptography and discuss its role in securing communication over networks. **(10)**

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