1. **Illustrate and explain the network architecture of IEEE 802.11 WLAN using neat sketches. (8)**
2. **Give an account of the topologies of Bluetooth with neat diagrams (8)**
3. **Comment on the factors that led to the widespread use of wireless applications (4)**
4. **Mention the characteristics of short-range radio (4)**
5. **Analyze and describe the functional elements of a Bluetooth transceiver with the aid of neat diagrams.**
6. **Compare and explain NRZ, RZ, and Manchester encoding schemes in detail. Illustrate each scheme using diagrams. (8)**
7. Explain and classify dipole antennas and their various types with neat sketches. (4)
8. **Illustrate and describe the key components of a wireless communication system using a neat sketch.** (4)
9. **Illustrate and describe the key components of a wireless communication system using a neat sketch.** (8)
10. **Analyze and discuss the importance of power conservation in wireless devices and explain the various power modes available in Bluetooth technology.** (8)
11. Compare and contrast analog and digital modulation techniques, highlighting their advantages, disadvantages, and applications. (4)
12. Explain and analyze the working principle of Direct Sequence Spread Spectrum (DSSS). Describe the process of signal spreading and de-spreading, and evaluate the role and effect of the chipping code on bandwidth. (8)
13. Draw the waveforms for the bit sequence 01001110 for the following

coding methods i) unipolar NRZ ii) NRZ-L, and NRZ-I schemes, iii) Manchester coding iv) polar RZ. (8)

1. Illustrate and describe the construction and working of a patch antenna with the help of a neat sketch. (4)
2. Describe with neat sketches the CSMA/CA channel access method adopted by IEEE 802.11 WLAN. (8)
3. Mention the parameters that cause interference in the coexistence of Bluetooth and Wi-Fi networks. Elaborate on the methods for improving the coexistence. (8)
4. Differentiate between Bluetooth and Zigbee standards (8)
5. Summarize the following characteristics (i) Impedance (ii)Directivity iii) Gain iv) Effective area (8)
6. A signal carries data in which one data element is encoded as one signal element. If the bit rate is 100 kbps, calculate the average value of the baud rate if c is between 0 and 1. (4)
7. Elaborate on the frequency hopping spread spectrum and explain its types in detail. (8)
8. Draw the waveforms for Amplitude shift keying and Frequency shift keying modulated waves (4)