

- Q.3** a. Explain with suitable diagram, how pre-emphasis & de-emphasis helps in reducing noise in FM systems. (8)
b. Explain the working of a PLL in demodulating FM. (8)
- Q.4** a. Explain with suitable diagram how DSB-SC signals are generated. (8)
b. Explain the Armstrong method of FM generation. (8)
- Q.5** a. Explain how transmission of light takes place in an optical fiber. (8)
b. What is Photo detector? Describe PIN photo diode with the help of diagram. (8)
- Q.6** a. What is a waveguide? How does transmission of electromagnetic waves take place in a waveguide. (8)
b. Explain how PCM is generated for an analog signal. (8)
- Q.7** a. What is a dipole antenna? Explain its working with radiation pattern. (8)
b. Explain the difference between sky wave propagation and ground wave propagation. (8)
- Q.8** Write Short notes on any **TWO** (2×8)
(i) Generation of AM using balanced modulator.
(ii) Comparison of TDM and FDM
(iii) Error correction techniques in Digital modulation.
(iv) Block diagram of TV transmitter.
- Q.9** a. (i) Explain the terms Orbit, Apogee and Perigee.
(ii) What is geostationary satellite and explain why is it needed? (8)
b. Give the fundamentals and applications of cavity resonators. (8)