

Duration :3hrs



Max.Marks:80

- N.B.** (1) Question No. 1 is compulsory.  
(2) Attempt any three questions out of remaining five.  
(3) Figures to the right indicate full marks.  
(4) Assume suitable data if required and mention the same in answer sheet.

1. Solve any four 20  
(a) Justify why FM is more immune to noise.  
(b) Define sensitivity, image frequency rejection and fidelity in radio receiver.  
(c) Explain Noise figure and noise factor.  
(d) Why IF is selected as 455 KHz in AM?  
(e) What is modulation? Explain the need of modulation.
2. (a) Explain concept of AM Wave with related equations and waveforms. 10  
(b) With the help of block diagram explain Phase Shift method of SSB generation. 10
3. (a) Explain the operation of Foster seeley discriminator with the help of circuit diagram and phasor diagram. 10  
(b) What are different methods of FM generation? Sketch the circuit and explain the principle of reactance modulator. 10
4. (a) What are the drawbacks of delta modulation? Explain the method to overcome these drawbacks. 10  
(b) With the help of suitable waveforms explain generation and detection of PWM. 10
5. (a) Explain Super heterodyne radio receiver in detail with block diagram. 10  
(b) Explain VSB Transmission in detail with its application. 10
6. Write short note on (any four) 20  
(a) Compare narrow band FM and wideband FM  
(b) FM noise triangle  
(c) Frequency division Multiplexing (FDM)  
(d) Pre emphasis and de-emphasis circuits  
(e) Aliasing error and aperture effect

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