

778

October 2023

Time - Three hours
(Maximum Marks: 100)

- [N.B. 1. Answer all questions under Part-A. Each question carries 3 marks.
2. Answer all the questions either (A) or (B) in Part-B. Each question carries 14 marks.]

PART - A

1. Define the characteristic impedance of symmetrical networks.
2. State the applications of filters in communication systems.
3. What is the need for modulation?
4. What are the various types of AM transmitters?
5. Write the formula for modulation index of FM.
6. What do you mean by Stereophonic FM transmitter?
7. State sampling theorem.
8. What are the advantages and disadvantages of PCM?
9. What is the operating principle of carbon microphone?
10. Define aspect ratio.

PART - B

11. (a) (i) What are the various types of Wave Propagation? State their frequency range of operation, advantages and applications. (8)
(ii) Define and explain for ionospheric region (a) Critical frequency (b) MuF (c) Skip distance. (6)

(Or)

[Turn over.....

- (b) (i) Draw the circuit diagram and frequency response characteristics of LPF, HPF and BPF. Write the expression for cut off frequency for all the above filters. (10)
(ii) Compare characteristics of symmetrical and asymmetrical networks. (4)

12. (a) (i) What do you mean by VSB modulation? Why we need it? Write its merits and limitations. (8)
(ii) Compare low level AM modulation and high level AM modulation. (6)

(Or)

- (b) (i) Draw the block diagram of Super heterodyne receiver. Explain the working of each block. (10)
(ii) Write the importance of IF in AM receiver. (4)

13. (a) (i) Explain the working of direct FM transmitter. (10)
(ii) Compare AM and FM receiver. (4)

(Or)

- (b) (i) Draw the block diagram of Stereo phonic FM Receiver. Explain the working of each block.(10)
(ii) What is AFC? List its uses.(4)

14. (a) (i) What are the various types of Pulse modulation techniques? (4)
(ii) Explain the detection of PAM. Draw its input and output waveforms. (10)

(Or)

- (b) (i) Explain the principle and working of Adaptive Delta modulation. Draw its input and output wave forms. (10)
(ii) What are the applications of Delta modulation and Adaptive Delta modulation? (4)

15. (a) (i) Explain the principle and working of Surround sound system. (10)
(ii) What are the applications of all types of microphones? (4)

(Or)

- (b) (i) Explain the construction, principle and working of Plasma display. What are its advantages and applications? (10)
(ii) Differentiate between LED, OLED and Plasma displays. (4)
