



C09-EC-304

3236

BOARD DIPLOMA EXAMINATION, (C-09)

OCT/NOV—2017

DECE—THIRD SEMESTER EXAMINATION

COMMUNICATION ENGINEERING

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is the need for modulation in communication system?
2. List the applications of SHF band of frequency spectrum.
3. Calculate the modulation index of an FM signal, if a 5 MHz carrier has a maximum deviation of 75 kHz.
4. Describe the advantages of De emphasis in FM briefly.
5. List any three merits of FM over AM.
6. List various frequency bands used in Radio Receivers.
7. Define 'image frequency' in Radio Receivers.

- * 8. Distinguish between high-level and low-level modulation.
- 9. Define reflection coefficient and standing wave ratio.
- 10. What is polarization? List different types of polarizations.

PART—B

10×5=50

Instructions : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Explain different types of (a) Internal Noise and (b) External Noise.
- 12. Describe time domain and frequency domain signal with waveforms.
- 13. (a) Explain the method of producing SSB. 5
(b) Mention the advantages of SSBSC. 5
- 14. (a) Describe the time domain equation for AM signal. 6
(b) Calculate the modulation index, if a carrier signal $20 \sin 2000t$ is amplitude modulated by a signal $10 \sin 400t$. 4
- 15. Draw the block diagram of superheterodyne receiver and explain its operation.
- 16. Draw the block diagram of FM transmitter using Armstrong method and explain its working.
- 17. Draw the electrical equivalent of transmission line and explain the parameters of transmission lines.
- * 18. Explain different layers of Ionosphere.
