



C14-EC-304

4240

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL—2018
DECE—THIRD SEMESTER EXAMINATION
ANALOG COMMUNICATION

Time : 3 hours]

[Total Marks : 80

PART—A

3×10=30

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

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

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

1. What is the need for modulation?
2. List the causes of distortion in transmission.
3. The peak amplitude of an AM signal varies from 2 V to 10 V. Determine the modulation index.
4. State the need for angle modulation.
5. What is the difference between low-level and high-level modulation?
6. Define selectivity of a radio receiver.
7. Define radiation pattern.

- * 8. State the need for folded dipole.
- 9. Define the characteristic impedance of free space.
- 10. Define the term 'fading'.

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. (a) What is the need of frequency spectrum? 4
 (b) Describe the frequency spectrums of VHF, UHF, SHF and EHF. 6
- 12. (a) Derive the time domain equation for an AM signal. 5
 (b) Derive the expression for total power of an AM wave. 5
- 13. (a) Explain noise triangle in FM. 6
 (b) Compare between AM and FM. 4
- 14. Draw the block diagram of basic SSB transmitter and explain the function of each block.
- 15. Draw the block diagram of FM receiver and explain the function of each block.
- 16. What is a half-wave dipole? Explain the formation of half-wave dipole and draw its radiation pattern.
- * 17. Explain the operation of broadside array with radiation pattern.
- 18. (a) Explain reflection, refraction and diffraction of EM waves. 6
 (b) Sketch different layers of ionosphere. 4
