



C14-EC-304

4240

BOARD DIPLOMA EXAMINATION, (C-14)  
OCT/NOV—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. State the need of modulation in communication systems.
2. Define signal-to-noise ratio and noise figure.
3. Define pre-emphasis and de-emphasis.
4. Define the modulation index in AM and FM.
5. Mention the specifications of transmitters.
6. Define sensitivity and fidelity.
7. Explain the principle of parabolic reflector.
8. State the need for folded dipole.
9. Specify different layers in ionosphere.
10. Briefly explain the tropospheric scatter propagation.

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**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.** Draw and explain the basic elements of communication system. 10
- 12.** (a) Derive the time domain equation for AM signal. 6  
(b) Draw the frequency spectrum of an AM signal and briefly write about its frequency components. 4
- 13.** (a) Compare between AM and FM. 4  
(b) Explain noise triangle in FM. 6
- 14.** With the help of block diagram explain the working of superheterodyne receiver. 10
- 15.** (a) Draw and explain the low-level modulated AM transmitter. 7  
(b) Write the factors affecting the choice of IF. 3
- 16.** With relevant diagrams explain the working of horn and loop antennas. 10
- 17.** (a) With the help of figures explain different antenna feed arrangements. 6  
(b) Define power gain and radiation resistance of an antenna. 4
- 18.** Explain sky wave propagation. 10

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