4240

BOARD DIPLOMA EXAMINATION, (C-14)
MARCH/APRIL-2019
DCE - THIRD SEMESTER EXAMINATION
ANALOG COMMUNICATION

Time: 3 Hours]   **[Max. Marks: 80**

PART-A

3x10=30M

Instructions: 1) Answer **all** the questions and each question carries **ten** marks.

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

1. Draw the AM wave form whose modulation index is less than 1.

2. Define signal-to-noise ratio and noise figure.

3. What are the effects of over modulation in AM?

4. List the applications of SSB.

5. List the requirements of transmitters.

6. Define sensitivity of a radio reciver.

7. Define power gain of an antenna.

8. What is the principle of turnstile antenna?

9. Define critical frequency, MUF in sky wave propagation.

10. What is duct propagation?

PART-B

5x10=50M

Instructions: 1) Answer any **five** questions and each question carries **ten** marks.

2) The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer.

3) Any missing data may be assumed as per standards.

11. Describe the effects of internal and external noises on communication system.

12. A carrier signal $c(t) = 5\cos 2\pi\, 10^6 t$ is modulated by a mesage signal $m(t) = 4\cos 2\pi 10^4 t$ to generate an AM signal with antena resistance $R=5\Omega$ then,

(i) Sketch the spectrum of modulated wave.   2M

(ii) Calculate band width, Modulation index, modulation eficiency and total power.   8M

13. (a) Define pre-emphasis and de-emphasis.   4M

(b) Explain wide band FM.   6M

14. Draw the block diagram of high level modulated transmitter and explain function of each block.

15. Draw the block diagram of super heterodyne reciver and explain its working.

16. Explain the operation of end fire array with radiation pattern.

17. (a) Explain the operation of parabolic refletor.   5M

(b) What are the different feeding mechanisms adopted for a parabolic reflector?   5M

18. Explain ground wave propagation of EM waves.

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