

Sep-21-00058

B. Tech. EXAMINATION, 2021

Semester IV (CBCS)

ANALOG COMMUNICATION

EC-401

Time : 2 Hours

Maximum Marks : 60

The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.

Note : Attempt *Four* questions in all, selecting *one* question from any of the Sections A, B, C and D. Q. No. 9 is compulsory.

Section A

1. Explain Wireless Communication system in detail with neat diagram. **15**
2. State and explain three properties of each Power signal and energy signals. **15**

Section B

3. Explain the following :
- (a) Thermal Noise 7.5
 - (b) Equivalent Noise bandwidth. 7.5
4. State and explain three properties of auto correlation function. 15

Section C

5. Explain the AM Generation using switching modulator and give the spectrum representation of the same. 15
6. Explain coherent detection of a DSBSC wave with block diagram. Also explain quadrature null effect. 15

Section D

7. Explain the demodulation of FM wave by using Balanced Frequency Discriminator circuit and its frequency response. 15
8. Explain PLL with a neat block diagram and derive the expression for the output. 15

(Compulsory Question)

9. Answer the following : 1.5×10=15
- (a) What is pre-emphasis ?
 - (b) What is equivalent Noise Temperature ?
 - (c) What is modulation index ?
 - (d) What is Frequency Deviation ?
 - (e) What is Image frequency ?
 - (f) Give *two* advantages of SSB transmission.
 - (g) State Carson's Rule.
 - (h) Define Low Level Modulation.
 - (i) What is Partition Noise ?
 - (j) Define correlation function.