R18 Regulation

Subject code: 2P4DC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

B.Tech IV Semester Supplementary Examinations, September 2023

Analog Communications

(ECE)

Maximum Marks: 70

Date:19.09.2023 Duration: 3 hours

Note: 1. This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10x2M=20 Marks)

1 Define modulation index for AM?
2 Draw the frequency spectrum of DSB-SC modulated wave?
3 Draw the frequency spectrum of VSB modulated wave and state the advantages?
4 Classify the methods for SSB-SC generation?
5 Define the modulation indices of FM and PM.
6 Write the expression for Carson's rule?
7 Define figure of merit.
8 Classify the sources of Noise.
9 Define the term fidelity and selectivity of a receiver.
10 Analyze amplitude limiting.

Part-B

Answer All the following questions. (5X10M=50Marks)

11 Argue on the coherent detection of DSB-SC modulated wave and explain the process. (10M)

OR

12 Explain the generation of AM signals using square law modulator. (10M)
13 Draw block diagram and explain the operation of phase discrimination method. (10M)

OR

14 Explain the principle of V.S.B Transmission. Compare VSB over SSB in all aspects? (10M)
15 a. Derive an expression for single tone FM Wave and Wide band FM. (5M)
b. Compare FM and AM. (5M)

OR

16 Define angle modulation? Derive mathematical expressions for angle modulation. (10M)
17 Explain the noise performance of SSB-SC receiver and prove its S/N ratio is unity. (10M)

OR

18 Illustrate the figure of merit for AM system. (10M)
19 Explain the basic characteristics of Receivers in detail. (10M)

OR

20 Explain the analog pulse modulation systems with neat waveforms. (10M)