



R18 Regulation

Subject code:2P4DC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Semester Supplementary Examinations, December 2025

ANALOG COMMUNICATIONS (ECE)

Maximum Marks: 70

Date: 20.12.2025

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)		Marks	CO	BTL
1	Define modulation index for AM.	2M	1	L1
2	Give the advantage of COSTAS loop.	2M	1	L1
3	Draw the frequency spectrum of VSB modulated wave and state the advantages.	2M	2	L1
4	Classify the methods for SSB-SC generation.	2M	2	L1
5	Compare wideband FM & Narrowband FM.	2M	3	L1
6	What are the applications of PLL?	2M	3	L1
7	Define figure of merit.	2M	4	L1
8	Define Average noise figure.	2M	4	L1
9	Compare sensitivity and fidelity of tuned RF receiver and super heterodyne receiver.	2M	5	L1
10	Draw the PWM and its corresponding PPM signal.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Argue on the coherent detection of DSB-SC modulated wave and explain the process.	10M	1	L2
OR				
12	Explain the generation of AM signals using square law modulator.	10M	1	L2
13	In a coherent detection if carrier applied is $\cos(2\pi f_c t + \phi)$ prove that there is a phase error in the output and output consists not only the message signal but also its Hilbert transform.	10M	2	L2
OR				
14	Draw the block diagram for the generation and demodulation of a VSB signal and explain the principle of operation.	10M	2	L2
15	Define the terms frequency sensitivity and frequency deviation?	10M	3	L2
OR				

16	Detect the FM wave by using balanced frequency discrimination method?	10M	3	L2
17	Derive the figure of merit of SSB system.	10M	4	L2
	OR			
18	Explain the operation of Pre emphasis and Deemphasis in FM system.	10M	4	L2
19	Explain the basic characteristics of Receivers in detail.	10M	5	L2
	OR			
20	Explain the generation and demodulation of PWM.	10M	5	L2