



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

InSem Examination-IISummer2025	
Exam Seat No.:	
Academic Year:2024-2025	Semester:IV
Class:SY	Program:B.Tech
Branch Code:ETC	Pattern:2023
Name of Course:Analog and Digital Communication	Course Code:2302213
Max. Marks:30	Duration:1.15 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 01 page.
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

Marks CO

Question No. 1

- 1 a) Calculate the percentage power saving when the carrier and one of the sideband are suppressed in an AM wave modulated to a depth of (a) 100 percentage and (b) 50 percentage (7) CO1

Question No. 2

- 2 a) Explain the Armstrong method used for FM signal generation (8) CO1

OR

- 2 b) Demonstrate the generation of a DSB-SC signal using a balanced modulator and describe its working with a circuit diagram. (8) CO1

Question No. 3

- 3 a) How can an FM signal be demodulated using a Phase-Locked Loop (PLL)? (7) CO2

Question No. 4

- 4 a) In a super heterodyne receiver having no RF amplifier, the loaded Q of the antenna coupling circuit is 90. If the intermediate frequency is 455Hz. Calculate the following : (8) CO2
i) The image frequency and image frequency rejection ratio at 950KHz
and
ii) The image frequency and image frequency rejection ratio at 10MHz

OR

- 4 b) Illustrate the working of an AM superheterodyne receiver with a block diagram and explain the function of each stage. (8) CO2

..... End of question paper.....