Registration No.: | | | | | | | | | | |

Total Number of Pages: 02 **Course: B.Tech**
Sub_Code: REE5D002

5th Semester Regular/Back Examination: 2024-25
SUBJECT: Fundamentals of Communication
BRANCH(S): EEE
Time: 3 Hours
Max Marks: 100
Q.Code: R175
Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.
The figures in the right hand margin indicate marks.

Part-I

Q1 **Answer the following questions:** **(2 x 10)**

a) Explain basic elements of a general communication system.
b) Describe generation of AM signal in short.
c) Define SNR.
d) Distinguish between frequency & phase modulation.
e) What is modulation index?
f) Draw a PLL circuit.
g) Draw block diagram of a radio transmitter.
h) Draw block diagram of TRF.
i) What is a mixer?
j) What is envelope detection?

Part-II

Q2 **Only Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve)** **(6 x 8)**

a) Describe AM Modulation process in detail.
b) Design a QAM system.
c) Analyze average envelope and peak envelope detectors.
d) Discuss selective filtering method.
e) Describe FM Modulation process in detail.
f) Explain Phase Modulation process in detail.
g) Explain discriminator and its applications.
h) Analyze narrow band and sideband FM.
i) Analyze effect of modulation index on bandwidth.
j) Discuss a practical medium power radio transmitter.
k) Describe superheterodyne receiver.
l) Analyze coherent detection process.

Part-III

Only Long Answer Type Questions (Answer Any Two out of Four)

Q3	**a)**	Describe AM demodulation process in detail.	**(8)**
	b)	Design a DSB-SC system.	**(8)**
Q4	**a)**	Analyze square law modulator.	**(8)**
	b)	Describe envelop detection of VSB+C signals.	**(8)**
Q5	**a)**	Describe FM demodulation process in detail.	**(8)**
	b)	Explain Phase demodulation process in detail.	**(8)**
Q6	**a)**	Discuss radio receiver measurement procedures.	**(8)**
	b)	Discuss system noise calculation processes.	**(8)**