

328514(28)

**B. E. (Fifth Semester) Examination,
April-May 2020**

(Old Scheme)

(Et & T Engg. Branch)

COMMUNICATION SYSTEM-I

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : All questions are necessary. Part (a) of each question is compulsory. Attempt any two parts from (b), (c) and (d).

Unit-I

1. (a) Define fourier Transform. 2
- (b) Describe Linearity, Time scaling & Duality property. 7
- (c) Describe Parsevals theorem. 7

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- (d) Describe spectral density function. 7

Unit-II

2. (a) Write two advantages of VSB. 2
(b) Describe AM Modulation and demodulation of AM waves. 7
(c) Describe DSB-SC generation with Balanced Modulator. 7
(d) Describe VSB transmitter in detail. 7

Unit-III

3. (a) What is Carson's rule. 2
(b) Describe narrow band and wide band FM. 7
(c) Describe preemphasis with circuit diagram. 7
(d) A carrier is frequency modulated (FM) by a sinusoidal modulating signal of frequency 2 kHz, it results in a frequency deviation Δf of 5 kHz. Find the bandwidth occupied by FM waveform. The amplitude of modulating Sinusoid is increased by a factor of 3 and its frequency lowered by 1 kHz. Find new bandwidth. 7

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Unit-IV

4. (a) Define Sensitivity. 2
(b) Describe high level Transistor collector modulator. 7
(c) Describe block diagram of Super heterodyne Receiver. 7
(d) Describe Armstrong method for indirect FM generation. 7

Unit-V

5. (a) Define Noise figure. 2
(b) Define Noise and also describe different types of noise. 7
(c) Describe Noise temperature and noise factor of amplifiers in cascade. 7
(d) If each stage has gain 10 dB and noise figure of 10 dB. Calculate overall noise figure of a two stage cascade amplifier. 7