

328615(28)

B. E. (Sixth Semester) Examination, 2020

(Old Scheme)

(ET & T Branch)

COMMUNICATION SYSTEM-II

Time Allowed : Three hours

Maximum Marks : 80

Minimum Pass Marks : 28

Note : Attempt all questions. Part (a) of each unit is compulsory. Attempt any two question from part (b), (c) and (d).

Unit-I

1. (a) What is Aliasings? 2
- (b) State and prove sampling theorem in time domain. 7
- (c) Explain generation and detection of pwm signal with neat diagram. 7

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- (d) Write the comparison between TDM and FDM system. 7

Unit-II

2. (a) What is quantization process? 2
(b) Draw the functional block diagram of PCM and explain its working. 7
(c) What is companding? Also explain the types of it. 7
(d) Draw the block diagram of delta modulation and explain its working. 7

Unit-III

3. (a) What is ASK and also draw its waveform? 2
(b) Explain generation and detection of QPSK. 7
(c) Explain the generation and detection of BPSK. 7
(d) Find the transfer function of optimum filter. 7

Unit-IV

4. (a) What is near-far problem? 2

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- (b) Explain the frequency hopping spread spectrum technique with block diagram. 7
(c) Explain the working principle of CDMA. 7
(d) Draw the functional block diagram of direct sequence and explain its working spread spectrum. 7

Unit-V

5. (a) Define information theory. 2
(b) Explain Shannon-Fano coding with the help of suitable example. 7
(c) Explain majority logic (threshold) decoding with diagram. 7
(d) Apply Huffman coding procedure for following message and also calculate coding efficiency :

$$[X] = [x_1, x_2, x_3, x_4, x_5, x_6, x_7]$$

$$[P] = [0.05, 0.15, 0.2, 0.05, 0.15, 0.3, 0.1]$$

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