Con. 5597–09. (REVISED COURSE) SP–7799

S.E. (Comp) Sem IV (R)

(3 Hours) [Total Marks : 100

Lib

Analog & Digital Communication

N.B. : (1) Question No. 1 is **compulsory**.
(2) Attempt any **four** questions of remaining **six** questions.
(3) **Figures** to the **right** indicate **full** marks for the question.
(4) Assume **suitable** data if **required**.

18/12/09
2-30 to 5-30

1. (a) Explain Noise Factor of Amplifier in Cascade. 5
(b) Compare F.M. and A.M. system. 5
(c) Explain Shannon's Theorem for channel capacity. 5
(d) Explain Matched Filter. 5

2. (a) (i) Explain frequency spectrum of A.M. wave. 5
(ii) Distortions in the envelope detector. 5
(b) (i) Effect of Noise in F.M. system. 5
(ii) Explain characteristics of Radio Receiver. 5

3. (a) Explain pulse width modulation and demodulation. 10
(b) What is need of multiplexing, explain FDM in detail. 10

4. (a) Explain delta-modulation and adaptive delta-modulation. 10
(b) Band limited 4 kHz signal are sampled at the Nyquist rate and quantized into 4 levels Q_1, Q_2, Q3 and Q_4 with probability. $P_1 = P_2 = 1/18$ and $P_3 = P_4 = 3/8$. 10
Find rate of information.

5. (a) What is effect of Gaussian Noise on Digital Communication. 10
(b) Explain inter symbol interference and flow it reduce. 10

6. (a) Explain Binary phase shifting key (BPSK) system. 10
(b) Explain QPSK transmitter and receiver system. 10

7. Write short notes on :– 20
(a) Cyclic Codes
(b) Noise Triangle
(c) QAM
(d) Thermal Noise.

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