

sem-IV

Communication system / INST / 10-12-15



Q.P. Code : 5446

(3 Hours)

[Total Marks :80

- N.B. : (1) Question No. 1 is compulsory.
(2) Attempt any three questions out of remaining five questions.
(3) Make suitable assumptions wherever necessary and mention the same.

1. Attempt any four questions:- 20
- (a) Explain in brief:-
(i) Signal to noise ratio
(ii) Noise figure
- (b) Discuss general telemetry system.
- (c) With neat block diagram explain the operation of Basic communication system.
- (d) Compare TDM and FDM.
- (e) Derive Friss formula.
2. (a) Define AM and explain High Level Collector Modulator along with circuit diagram and waveform. 10
- (b) The antenna current of an AM broadcast transmitter modulated to a depth 40% by an audio sine wave is 11A. It increases to 12A as a result of simultaneous modulation by another audio sine wave. What is modulation index due to second wave. 10
3. (a) Explain any one method of F. M. generation. 10
- (b) In FM broadcasting, What should be the maximum frequency deviation? Who has laid down this constraint? How bandwidth requirement of FM wave are calculated? Explain carson's rule. 10
4. (a) What is pulse amplitude modulation? Explain modulation and demodulation process. 10
- (b) Explain, why it is essential to use radio frequency (RF) telemetry. Describe it with some relevant example. 10
5. (a) Explain in brief:- 10
- (i) Amplitude shift keying (ASK)
- (ii) Frequency shift keying (FSK)
- (b) Explain with a neat block diagram Delta modulation transmitter and receiver system. 10

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2

6. Write short notes on **any four**:-
- (a) PCM transmitter system,
 - (b) OSI reference model,
 - (c) Modes of communication.
 - (d) Practical diode detector,
 - (e) Superheterodyne receiver.
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20