

II B.Tech II Semester Supplementary Examinations, April/May 2005
COMMUNICATION ENGINEERING
(Bio-Medical Engineering)

Time: 3 hours**Max Marks: 80**

Answer any FIVE Questions
All Questions carry equal marks

1. (a) Explain filter method of suppressing unwanted sideband.
(b) A SSB-SC transmitter operating at a 16MHz has frequency stability of 1 part per million. If its transmission is reproduced by a receiver whose stability is 8 part per million, what is the maximum frequency error at the output of the receiver could have in reproducing the transmission.
2. (a) Explain clearly envelop detector one method of demodulation of AM wave.
(b) A certain transmitter radiates 9KW with the carrier unmodulated and 10.125 KW when the carrier is sinusoidally modulated. Calculate the modulation index and percent of modulation. If another sine wave, corresponding to 40
3. (a) Explain how frequency stability is achieved in modern transmitter.
(b) Describe with aid of suitable diagram, the principal method of SSB power generation.
(c) Describe the advantages of a SSB SYSTEM for high frequency point to point communication and explain why it is unsuitable for broadcasting.
4. (a) Distinguish between simple AGC and delayed AGC.
(b) Draw a block diagram of a superheterodyne receiver and explain the function of each stage.
(c) What is meant by the term tracking error? Explain.
5. List the distinguishing features of communications receiver and draw the schematic. Explain briefly the operation of each where necessary, and show some of the more important circuits or block diagrams.
6. (a) A narrow band signal has a bandwidth of 10kHz centered on a carrier frequency of 100kHz. It is proposed to represent this signal in discrete time form by sampling its inphase and quadrature components individually. What is the minimum sampling rate can be used for this representation?
(b) Explain the working of PAM modulator.
7. (a) Discuss the noise considerations in PCM. Give the influence of E_b/N_0 on the probability of error.
(b) Discuss the applications of M-ary modulation schemes.
8. Explain what do you understand by the following terms used in relation to packet switched data network.

- (a) Datagram
- (b) Virtual circuit
- (c) Logical channel

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