B. Tech.
(SEM. VIII) EXAMINATION, 2006-07
COMMUNICATION SYSTEM PRACTICE

Time : 3 Hours] [Total Marks : 100

Note : Attempt all questions

1. Attempt any four of the following:
   (a) Why modulation is necessary for long distance communicator? Discuss various modulation schemes.
   (b) Explain the working of low level AM modulator with diagram.
   (c) For a low level AM modulator with modulation index m=0.8, quiescent voltage given A_q = 100, an input carrier frequency f_c = 500 kHZ with an amplitude V_C = 5mV and a 1000 Hz modulating signal, determine maximum and minimum voltage gain.
   (d) Discuss various AM receiver design parameters.
   (e) Explain the working of Phase-locked loop Direct FM transmitter.
   (f) Describe two-way FM radio.

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2 Attempt any **four** of the following:
   (a) Describe Telephone transmitter and Receiver circuit.
   (b) What is telegraphy? Explain its five important applications.
   (c) Discuss the advantages and disadvantages of voice frequency telegraphy.
   (d) Discuss the features of Rotary Dial Telephone.
   (e) Describe Public Switched Telephone Networks.
   (f) What are various signalling tones used in automatic exchange.

3 Attempt any **two** of the following:
   (a) How microwave transmission systems are different than conventional system? Discuss the working of TWO cavity Klystron with figure.
   (b) Explain satellite orbits with the help of block diagram. Explain the constructional features of satellites.
   (c) With the help of block diagram explain the working of high power pulsed radar.

4 Do any **two** of the following:
   (a) Briefly explain the difference between mobile and protable telephone set. Compare coverage zone and a cell. Explain why hexagonal cells are used instead of circular. How frequency reuse is utilized in wireless communication?
(b) How speech coding is done in GSM and CDMA systems. Explain GSM system architecture.

c) Discuss teh salient features of IS-95 system.

5 Attempt any two of the following:

(a) With the help of block diagram explain various component of optical fiber communication system. What are different types of optical fiber possible? Compare them.

(b) Explain various losses taking place in optical fiber cable. For a single mode optical fiber cable with 0.25 dB/km loss, determine the optical power 100 km from 0.1 mW source.

(c) What is Light Emitting diode? With diagram explain the working of surface emitting LED. Compare Lasers with LED.