5E3252-P

Roll No. : _____ Total Printed Pages : 4

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B. Tech. (Sem. V) (Main) Examination, December - 2011

Computer Science

5CS3 Telecommunication Fundamentals (Common for Comp. & IT)

Time : **3** Hours] [Maximum Marks : **80**

[Min. Passing Marks : **24**

Instructions to Candidates :

*Attempt any **five questions** selecting **one question** from **each unit**. All questions carry **equal** marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

Use of following supporting material is permitted during examination.
(Mentioned in form No. 205)

1. NIL 2. NIL

Assume Boltzman constant = 1.38×10^{-23} m^2 kg S^{-2} K^{-1}.

UNIT - I

1 (a) In a transmission line, the input power is 4mw. The line segment 1 has a loss of 12 dB, amplifier has a gain of 35-dB while the line segment 2 has an attenuation of 10 dB. Find the output power at the end of line segment 2. 3

(b) If the received signal level for a particular digital system is –151 dBW and the receiver system effective noise temperature is 1500 °K what is E_b/N_o for a link transmitting 2400 bps. 3

(c) Show that doubling the transmission frequency or doubling the distance between transmitting antenna and receiving antenna attenuates the signal by equal amount. Compute the attenuation. 4