

4E 2920Roll No. 10ESK17042

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4E 2920**B.Tech. IV Semester (Main/Back) Examination 2012****Computer Science and Information Tech.****4CS6.1 Analog and digital Communication****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 may suitably be assumed and stated clearly. Units of quantities used/ calculated must be stated clearly.)

Unit - I

1. What is mean by single side band suppressed carrier modulation. What are its advantages and disadvantages. With respect to 'AM'. (8+4)
2. A 400W carrier is modulated on a depth of 75%. Calculate the total power in modulated wave for full AM. (4)

OR

1. Draw the circuit diagram of balanced modulator using diode for generation of DSB-SC wave. Describing the working of this circuit using necessary mathematics. (12)
2. State and prove the sampling theorem. (4)

Unit - II

1. Draw the circuit diagram of FM demodulator circuit. Explain the working. (8)
2. An FM wave is given by $S(t) = 20 \sin [6 \times 10^8 t + 7 \sin 1250 t]$ Determine
 - a) Carrier and modulated frequency.
 - b) Modulation Index
 - c) Maximum deviation
 - d) Power dissipated in 100Ω resistor. (2+2+2+2=8)