4E2920

Roll No. : _____ Total Printed Pages : 3

4E2920

B. Tech. (Sem. IV) (Main / Back) Examination, June/July - 2013
Computer Science & Information Tech.
4CS6.1 Analog & Digital Communication

Time : 3 Hours] [Total Marks : **80**
[Min. Passing Marks : **24**

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**

UNIT - I

1 (a) With the help of circuit diagram explain the working of ring modulator for generating a DSB-SC signal. 8

(b) An SSB transmission contain 10 kW. This transmission is to be replaced by a standard amplitude modulated signal with the same power content. Determine the power content of the carrier and each of the side bands when the percentage modulation is 80%. 8

OR

1 (a) Explain the square law diode modulation method for AM generation. 8

(b) Explain the phase shift method of SSB generation. List its advantages and disadvantages with respect to the other methods. 8

UNIT - II

2 (a) Compare AM, FM and PM. 8

(b) Draw the circuit diagram of varactor diode modulator and explain its working. 8

OR

2 (a) Write short notes on :
(i) Pre emphasis
(ii) De emphasis. 8

(b) Explain the working of FM transmitter and receiver with block diagram. 8

UNIT - III

3 (a) Obtain an expression for signal to noise output ratio of a baseband PCM system in terms of input signal to noise ratio and number of quantization levels. 8

(b) Why companding is required in PCM system ? Explain briefly. 8

OR

3 (a) Draw and explain the working of delta modulation. Also explain adaptive delta modulation compare its performance with delta modulation. 8

(b) Write short note on comparison of PCM and DM. 8

UNIT - IV

4 (a) Write short notes on :
(i) PAM
(ii) PWM. 8

(b) Briefly explain unipolar and bipolar transmission. 8

OR

4 (a) Explain the concept of Nyquist criterion for distortion less base band binary transmission in communication system. **8**

(b) Discuss PAM-TDM using suitable block diagram. **8**

UNIT - V

5 Explain the binary ASK. What are the various techniques to generate ASK ? Explain coherent and non-coherent demodulation techniques of ASK. **16**

OR

5 Explain PSK. What are modulation and demodulation technique of PSK ? Why coherent demodulation technique cannot be applied for PSK detection ? **16**
