

Electrical and Electronics Engineering

Fifth Semester

Regulation 2008

November /December 2014

EC2311-Communication Engineering

Part A (10*2=20)

1. A transmitter radiates 9KW with the carrier unmodulated and 10.125 KW when carrier is sinusoidally modulated .Calculate the modulation index.
2. Why is VSB preferred for TV video transmission.
3. Draw the block diagram of an adaptive modulator.
4. What are the two primary differences between MSK and QPSK ?
5. An analog signal is band limited to BHz sampled at the nyquist rate and the samples are quantised into 4 levels .The quantization levels Q1,Q2,Q3 and Q4 are assumed to be independent and occur with propabilities $p_1=p_4=1/8$ and $p_2=p_3=3/8$.Find the information rate of the source.
6. List the properties of Hamming distance.
7. What are the popular coding sequences of CDMA system.
8. Give out the merits of TDMA system.
9. Briefly comment on the aperture actuators used in satellite.
10. What is SCADA?

Part B(5*16=80)

11.A .Name the methods used for the suppression of unwanted side band in AM transmission ?Discuss the working of any one of them.

Or

B.1.Compare the features of FM with AM .Also Write the merits and demerits of FM.

2.Discuss the Armstrong method of FM generation.

12.A.1.Discuss on the process companding and its characteristics.

2.How does flat top sampling differ from natural sampling ?Illustrate also obtain the filtered output.

Or

B.Explain QPSK with a block diagram and spectrum .Also discuss the phasor diagram for sinusoidals.

13.A.For the given 8 bit stream 11010100.plot the NRZ,RZ,AMI,HDBP,differential Manchester codes.

Or

B.Discuss the viter bi algorithm by showing the possible paths through the trellis of a coder.Assume the state diagram of any coder.

14.1.500 users employ FDMA to transmit 1000-bit packets of data. The channel band width is 100MHz and QPSK is used at each of the 500 carrier frequenciesemployed.

- 1.What is the maximum bandwidth allocated to each user?
- 2.What is the bit rate employed by each user.
- 3.How long does it take to transmit a packet?

Or

B.Draw a typical TDMA system Explain the operation with the time pattern.

15.A.Discuss broadly on the multiple access techniques used in satellite communication.

Or

B. Describe the following:

- 1.Optical detectors and their types.
- 2.Satellite types.
- 3.Digital filters used in satellite systems.
- 4.Optical Link.