EC - 7011
B.E. VII Semester
Examination, December 2014
Wireless Communication
Time : Three Hours
Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.
iii) Assume any missing data.

1. a) Define the following terms:

i) Modulation

ii) Bandwidth

iii) SNR

iv) Noise

b) Define the term fading margin and outage probability mention their significance in cellular planning.

2. a) Discuss the effect of path loss on the performance of a cellular radio network.

b) Discuss the mathematical model of the wireless channel. Which take into account all possible effects observed over the channel.

b) What do you mean by spreading of spectrum? How can you say that spread spectrum becomes spectrally efficient and in which case?

4. a) What do you mean by multi hop transmission? Where it is applicable.

b) Show that for a reference transmitter with EIRP of 1kW

in free space, the usable field strength $E_u = \sqrt{\frac{30 P_t G_t}{d}}$.

5. a) Describe the method for controlling the errors? How can the error control be achieved with the error detection schemes?

b) How maximum likelihood sequence estimation can be made? Explain in brief.

6. a) Describe the mathematical model of the radio channel. b) Design a three-tap linear transversal equalizer for the received pulse *r(t)* , where

r (0) = 1, r(1) = 0.3, r(-1) = - 0.3
r (2) = 0.1, r(-2) = 0.2
r(3) = - 0.03, r(-3) = -0.02

Also find the setting of the coefficient values.

7. a) What do you mean by blind equalize? Explain.

b) Discuss the condensed parameters.

8. Write short note on any two of the following:
a) Antennas for mobile stations
b) Frequency dispersive fading
c) Transmit diversity
d) Narrow band model