2EC 705

Enrollment No: _____

GANPAT UNIVERSITY

B. Tech. Semester VII Electronics & Communication Engineering Examination (Regular) November-December 2014
2EC 705: Wireless Communication

Max. Time: 3 Hrs.] **[Max. Marks: 70**

Instructions:

1. Attempt all questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the right indicate full marks.
4. Assume suitable data, if necessary.

SECTION-I

1	(A)	How drive test is conducted for BTS site? Explain any one case.	6
	(B)	Briefly explain the OFDM modulation.	6
		OR	
1	(A)	State the advantages and disadvantages of WiFi and WiMAX.	6
	(B)	What are the differences between forward and reverse link in CDMA one? Explain in detail.	6
2	(A)	Briefly explain how the call is initiated in case of MSC to landline.	5
	(B)	What is the importance of iterative decoding in Turbo Codes? Explain in details.	6
		OR	
2	(A)	Give difference among TDMA, FDMA and CDMA.	6
	(B)	What is the purpose of interleaving in wireless communications?	5
3	(A)	How spreading of band helps reducing in band interference? Briefly explain frequency hopping spread spectrum.	6
	(B)	How RF planning is done for BTS/ BSC site?	6

SECTION-II

4 (A) A vehicle receives a 900 MHz transmission while travelling at a constant velocity for 10 s. The average fade duration for a signal level 10 dB below the rms level is 1 ms. How far does the vehicle travel during the 10 s interval? How many fades does the signal undergo at the rms threshold level during a 10 s interval? Assume that the local mean remains constant during travel. 6

(B) Briefly explain the large scale propagation model used in urban areas. 6

OR

4 (A) The two-ray model defined by the impulse response $h(t) = a_1\delta(t-\tau_1) + a_2\exp(-j\theta)\,\delta(t-\tau_2)$. The model parameters are the delay times τ_1 and τ_2, the uniformly distributed phase θ, and the real coefficients a_1 and a_2. Determine the transfer function of the model, and its power-delay profile. Show that the model exhibits frequency-selective fading due to variations in the co-efficients a_1 and a_2. 6

(B) Derive the equation of phase difference between LOS and diffracted path for diffraction geometry. How to solve multiple knife edge diffraction? 6

5 (A) Draw the summarized diagram of small scale fading based on multipath time delay spread and Doppler spread. 6

(B) How you can increase capacity and coverage of GSM system? 5

OR

5 (A) What is grade of service? Explain Erlang B concept. 6

(B) Derive the equation of CDF and median for Rayleigh density function. Also state the equation of Rician density function. 5

6 (A) Write short note on: 12

i. Offset QPSK, pi/4 QPSK,
ii. MSK
iii. PN Sequence

END OF PAPER