(3 Hours) **[Total Marks: 80]**

N.B.: (1) Question no 1 is compulsory
(2) Solve any three from remaining five
(3) Assume suitable data if required.
(4) Figures to the right indicate full marks.
(5) Draw neat diagrams wherever required.

1	**(a)**	What is timing advance in GSM?	**05**
	(b)	Explain Foliage loss in propagation.	**05**
	(c)	What is cell dragging and dwell time?	**05**
	(d)	How handoffs are prioritized	**05**
2.	**(a)**	If bw=1.25MHz, R=9600 bps and minimum acceptable E_b/N_0 is found to be 10 dB determine the maximum no of users that can be supported in a single-cell CDMA system using a) omnidirectional base station antennas and no voice activity detection and b) 3 sectors at base station and activity detection with α=3/8 assume the system is interference limited.	**10**
	(b)	Draw and explain 3GPP architecture	**10**
3	**(a)**	Draw and explain Signaling architecture of GSM.	**10**
	(b)	What is the concept of software Defined Radio	**10**
4	**(a)**	Classify small scale fading based on Multipath Time Delay Spread and Doppler spread and explain in brief each type.	**10**
	(b)	Explain Block Call delayed and Block Call cleared System	**10**
5	**(a)**	Draw reference architecture of GPRS and explain role of SGSN and GGSN	**10**
	(b)	Draw and explain IMT 2000 architecture	**10**

6. Write short note on

a) MIMO technique in LTE

b) Rake Receiver

c) Power control in CDMA 2000 and WCDMA