

(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 $bw=1.25\text{MHz}$, $R=9600\text{ bps}$ 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 $\alpha=3/8$ 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