

## Paper / Subject Code: 42402 / Mobile Communication

(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.

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|----|--|----|
| 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 $bw=1.25\text{MHz}$ , $R=9600$ 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  |    |