

BE / SEM - VII / EXTC / CBGS

(3 Hours)

[Total Marks: 80]



13 MAY 2019

- 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 | |