Code No: **R42041**   **R10**   **Set No. 1**

IV B.Tech II Semester Supplementary Examinations, July/August - 2017
CELLULAR AND MOBILE COMMUNICATIONS
(Electronics and Communication Engineering)

Time: 3 hours   Max. Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1 a) Explain about analogue cellular mobile radio system(AMPS) [8]
  b) What are the various mobile phone technologies that are existing in addition to the cellular networks [7]

2 a) Derive the C/I in worst case scenario with an Omni directional antenna [8]
  b) Determine the signal to co-channel interference ratio C/I at the mobile receiver located at the boundary of its Omni directional operating cell, under the influence of interfering signals from six co-channel interfering cells in the first tier in a cellular system designed with (i) N=7 (ii)N=9 (Where 'N' is cluster size) [7]

3 a) Explain co-channel interference reduction factor and derive the general formula for C/I [8]
  b) Discuss the effect of near-end and far-end interference of mobile unit [7]

4 a) Explain about Long-distance propagation [8]
  b) Explain the effect of propagation of mobile signals over water and flat open area [7]

5 a) Explain about umbrella-pattern antennas used at cell sites. [8]
  b) Explain mobile high-gain antenna in detail [7]

6 a) Explain Dynamic channel assignment and fixed channel assignment [8]
  b) Explain the concept of cell sectorization with neat diagrams. [7]

7 a) Explain about the types of Hand offs in detail. [8]
  b) Explain the various handoff initiation techniques. [7]

8 a) What is GSM? Explain GSM services and features [8]
  b) Explain the GSM architecture with a neat sketch. [7]