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## EC-6001 (CBGS)

### B.E. VI Semester

Examination, November 2019

## Choice Based Grading System (CBGS)

### Cellular Mobile Communication

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Draw the schematic diagram of a basic cellular system and describe the function of each unit.  
b) Explain co-channel interference and how it affects the system capacity? Derive expression for signal to interference in terms of cluster size.
2. a) What is the primary purpose of cell splitting? Explain the cell splitting techniques.  
b) Discuss the propagation between two fixed station over water or flat open-land.
3. a) Write short note on mobile antennas.  
b) Determine the transfer function of the propagation channel from mobile to mobile propagation.
4. a) Discuss the design of directional antennas in  $K = 7$  cell pattern and find  $C/I$  ratio for worst case. What will be  $C/I$  for  $K = 4$  cell pattern.

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b) What is Umbrella pattern effect? What are its benefits? Explain.

5. a) Describe the effects on coverage and interference by applying power decrease, antenna height decrease and beam tilting.  
b) Explain the interference between systems.

6. a) Clearly explain the functions of:

i) Setup channel

ii) Paging channel

b) What is Handoff? What do you mean by soft handoff and hard handoff? Explain.

7. a) Explain GSM architecture in brief. What is layer modeling? Explain. <http://www.rgpvonline.com>

b) Explain the modulation process and characteristics for reverse CDMA channel.

8. Write short notes on (any two):

a) PDC

b) Frequency management

c) Foliage loss

d) Frequency Reuse

e) Call blocking

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