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Total No. of Questions: [09]

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B. Tech CSE (Semester – 8th)
CELLULAR AND MOBILE COMMUNICATION
Subject Code: BECEO-1002
Paper ID: 18OE111123

Time: 03 Hours

Maximum Marks: 60

Instruction for candidates:

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

Section – A

(2 marks each)

Q1. Attempt the following:

- a. Define frequency reuse ratio.
- b. What is the difference between mobile originated call and network originated call?
- c. What do you mean by foliage loss?
- d. What do you mean by leaky feeder?
- e. What is IS-136?
- f. What is co-channel interference?
- g. What is the significance of diversity receiver?
- h. What is borrowing channel allocation in mobile communication?
- i. What are the advantages of CDMA over other techniques?
- j. What do you understand by Blocking Probability? Give its typical value.

Section – B

(5 marks each)

- Q2. How can you compensate for the impact of the Doppler Effect in a cellular system? Explain.
- Q3. Explain the various channel assignment strategies used in the cellular networks.
- Q4. What is the diversity reception? How can it be used to combat multipath?
- Q5. What do you understand by coverage hole? Give option available for coverage hole-filler.
- Q6. Give a detailed note on the antennas used at the cell site.

Section – C

(10 marks each)

- Q7. Why hand-off is necessary for cellular systems? Determine the two types of hand offs based on signal strength and C/I ratio.
- Q8. In a cellular system with a 7-cell cluster, 48 traffic channels are assigned. Show the assignment of the channels to each cell if
 - (a) Omnidirectional antennas are used.
 - (b) 3-sector directional antennas are used.
 - (c) 6-sector directional antennas are used.
- Q9. Describe general approach to obtain path i.e. point to point prediction model. Details must include non-obstructive, obstructive conditions both.