

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech (ECE) (Sem.-6)
CELLULAR & MOBILE COMMUNICATION
Subject Code : DE-1.1
Paper ID : [A0322]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTION-A is COMPULSORY** consisting of **TEN** questions carrying **TWO** marks each.
2. **SECTION-B** contains **FIVE** questions carrying **FIVE** marks each and students have to attempt any **FOUR** questions.
3. **SECTION-C** contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A

1. Answer briefly :

- Define channel sharing and borrowing.
- Define frequency reuse and frequency reuse factor.
- What is co-channel interference?
- What are the various performance criteria of a cellular mobile system?
- List various 2G communication standards along with their key parameters.
- Define handoff and its types.
- What is forward and reverse channel?
- What is adjacent channel interference?
- Define blocked call and call dropped rate.
- What is coverage hole filler?

SECTION-B

2. Explain in detail about how a call initiated by a mobile subscriber to another mobile subscriber is established with the help of timing diagram.
3. With neat diagram explain frequency reuse concept. Justify system capacity increases by frequency reuse with necessary mathematical equations.
4. Write short notes on EDGE and CDMA 2000 communication system.
5. Discuss the effects of reduced power, reduced antenna height and beam tilt on coverage area and interference.
6. Derive the desired carries to interference (C/I) ratio from a normal case in an Omini directional antenna system.

SECTION-C

7. Explain the protocol architecture, features and frame format of GSM in detail.
8. Why is cell splitting needed? Define 4:1 and 3:1 cell splitting. Explain segmentation in a cellular system. Why is it required?
9. Why handoff is required in a cellular mobile communication system? Explain the concept of handoff on the basis of following points : nature of handoff, purpose of handoff and algorithms of handoff.