

Roll No.

22152

**M. E. 2nd Semester (E.C.E.)
Examination – December, 2014
WIRELESS MOBILE COMMUNICATION**

Paper : MEEC-508

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any *five* questions out of given *eight* questions. All questions carry equal marks.

1. (a) Prove that for a hexagonal geometry, the co-channel reuse ratio is given by $Q = \sqrt{3N}$, where
$$N = i^2 + ij + j^2.$$
 6
- (b) List some applications of RFID technology. 4
- (c) What does a small delay spread indicate about the characteristics of the fading channel ? 5

- (d) How does the duct formation takes place ? 5
2. (a) List the factors to determine the minimum distance between co-channel cells. 5
- (b) How can we reduce the inter cell interference ? 5
- (c) Illustrate that lowering the cell site antenna height in the valley is very effective in reducing the received signal power in a distant high elevation area. 5
- (d) What is the use of directional antenna in mobile communication ? 5
3. Explain the significance of communication models. Explain any four out of them. 20
4. What is diversity ? How many types of diversities are there ? How these are usefull in improving the quality of communication ? 20
5. (a) Compare TDMA, FDMA & CDMA. 10
- (b) What is cell capacity ? Derive an expression for it. 10
6. (a) Compare GSM & CDMA standards. 10
- (b) Explain the concept of packet error modeling on fading channels. 10

7. (a) Explain the concept of trunking and grade of service. Also classify that whether it is required or not? 10

(b) What is signal fading ? How it affects mobile communication ? What are fading statistics ? 10

8. Write short notes on : 20

(i) IS 95

(ii) GPRS.