



(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 121653**

Roll No.

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## B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15  
**WIRELESS COMMUNICATION**

Time : 2 Hours]

[Total Marks : 50

**1 Attempt any FOUR parts : 3.5×4=14**

- a) Which types of fading are created by multipath ?  
Brief note the effects of them.
- b) Give a note on reuse distance signal to co-channel interference ratio in context with cellular communication.
- c) Compute the received carrier frequency if a vehicle moving at 60mph coming directly toward transmitter and going away from the transmitter in a GSM system.
- d) Enlist the characteristics of speech signal.
- e) Give a note on time dispersion and frequency dispersion parameters of fading channel.
- f) Compare and contrast the direct sequence spread spectrum and frequency hopped spread spectrum.

**2 Attempt any TWO parts : 6×2=12**

- a) Illustrate about the following :
  - i. Reflection
  - ii. Diffraction
  - iii. Scattering
- b) List out the various types of fading. Explain them in detail.
- c) Explain the theory of multipath shape factor for fading wireless channels.

**3 Attempt any TWO parts : 6×2=12**

- a) Name the multiple access techniques which are used in mobile communication. Explain with the help of example.
- b) Narrate in detail about the linear predictive coders.
- c) Give the significance of vocoders. Explain it in detail.

**4 Attempt any TWO parts : 6×2=12**

- a) With a neat sketch, explain the working principle of RAKE receiver.
  - b) Elaborate in detail about the linear and nonlinear equalization techniques.
  - c) Enlist the various types of diversity techniques and explain them.
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