

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**M. E. - SEMESTER – I • EXAMINATION – WINTER • 2013**

**Subject code: 710601N****Date: 06-01-2014****Subject Name: Wireless and Mobile Communication****Time: 10.30 am – 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain in detail the Authentication and Encryption process in GSM. **07**  
(b) What is the difference between the 3G cellular networks and WLANs? **07**
- Q.2** (a) Discuss the power control mechanisms in cellular systems. **07**  
(b) Draw the Reference Architecture of GSM. Explain in brief the function of every block. **07**
- OR**
- (b) What is ad-hoc network? Compare the ad-hoc and infrastructure network Topologies. **07**
- Q.3** (a) Why are cellular service providers interested in location-dependent services? Give some examples of location-dependent services. **07**  
(b) What is wireless application protocol? Explain its programming architecture. **07**
- OR**
- Q.3** (a) What is the difference between the MAC protocol of the Bluetooth and the IEEE802.11. **07**  
(b) Discuss the advantages of CDMA technology. Why orthogonal codes are used in CDMA mobile? **07**
- Q.4** (a) Explain Channel Assignment Strategies in Detail. **07**  
(b) What is small scale fading? Discuss the factors affecting small scale fading. **07**
- OR**
- Q.4** (a) What is radio wave propagation? Explain free space propagation. **07**  
(b) What is MSK? How one achieves GMSK? Explain why GMSK is used in GSM. **07**
- Q.5** (a) What is spread spectrum modulation technique? Explain Direct sequence spread spectrum. **07**  
(b) Explain knife Edge Diffraction model in detail. **07**
- OR**
- Q.5** (a) Explain importance and significance of Mobile IP. **07**  
(b) Explain Hand-off Strategies in Detail. **07**

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