

GUJARAT TECHNOLOGICAL UNIVERSITY**M. E. - SEMESTER – II • EXAMINATION – SUMMER • 2014****Subject code: 1722703****Date: 01-07-2014****Subject Name: Radio Network Planning and Optimization****Time: 02:30 pm - 05:00 pm****Total Marks: 70****Instructions:**

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

- Q.1** (a) Discuss the Radio Network Planning process for UMTS networks in brief. **07**
(b) What is Radio Resource Management? Describe in brief all the functions covered under Radio Resource Management. **07**
- Q.2** (a) Write a short note on IEEE standard 802.11 (WLAN) and its enhancements. **07**
(b) What are the Radio Network Planning issues? Explain the co-planning process of WCDMA and GSM networks. **07**
- OR**
- (b) Explain Admission Control with a detailed description of Wideband power-based admission control and Throughput-based admission control. **07**
- Q.3** (a) Explain dimensioning of WCDMA networks with HSDPA. **07**
(b) Explain Intra-system Intra-frequency soft handover and Intra-system Intra-frequency hard handover. **07**
- OR**
- Q.3** (a) What are the general requirements of a Radio Network Planning tool? Also explain the workflow supported by a typical RNP tool. **07**
(b) What are the functions of a Resource Management? Explain cell search procedure. **07**
- Q.4** (a) What are the different techniques for improving the coverage of radio networks? **07**
(b) What are the causes of interference in a WCDMA-GSM network? Explain the interference reduction methods. **07**
- OR**
- Q.4** (a) What do you mean by Radio Network Optimization? Explain in detail with a neat sketch of interfaces required for network-wide optimization. **07**
(b) Describe the influence of the inclusion of High-speed Downlink Packet Access (HSDPA) transmission on the radio link budgets. **07**
- Q.5** (a) Explain with a neat sketch the Telecom Management Network model. Enlist the functions supported by each layer. **07**
(b) What is Automated Optimization? What are the factors affecting Automated Optimization? Explain with the help of example how Automated Optimization is done. **07**
- OR**
- Q.5** (a) Explain the Radio Access Network Key Performance Indicators. **07**
(b) Explain data mining and knowledge discovery in databases for QoS analysis of a network. **07**
