Sea	t No.:	Enrolment No	
		GUJARAT TECHNOLOGICAL UNIVERSITY	
		M. E SEMESTER – II • EXAMINATION – SUMMER • 2014	
Sul	bject	code: 1722703 Date: 01-07-2014	
Sul	bject	Name: Radio Network Planning and Optimization	
Tir	ne: 02	2:30 pm - 05:00 pm Total Marks: 70	
Inst	tructio		
		Attempt all questions.	
		Make suitable assumptions wherever necessary. Figures to the right indicate full mark.	
Q.1	(a) (b)	Discuss the Radio Network Planning process for UMTS networks in brief. What is Radio Resource Management? Describe in brief all the functions covered under Radio Resource Management.	07 07
Q.2	(a) (b)	Write a short note on IEEE standard 802.11 (WLAN) and its enhancements. What are the Radio Network Planning issues? Explain the co-planning process of WCDMA and GSM networks.	07 07
	(b)	OR Explain Admission Control with a detailed description of Wideband power-based admission control and Throughput-based admission control.	07
Q.3	(a) (b)	Explain dimensioning of WCDMA networks with HSDPA. Explain Intra-system Intra-frequency soft handover and Intra-system Intra-frequency hard handover.	07 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>(b)</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
Q.4	(a)	<b>OR</b> 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
0.5	(c)	OR  Evaloin the Radio Access Network Key Performance Indicators	07
Q.5	(a) (b)	Explain the Radio Access Network Key Performance Indicators. Explain data mining and knowledge discovery in databases for QoS analysis of a network.	07

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