Seat No.:	Enrolment No.
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## **GUJARAT TECHNOLOGICAL UNIVERSITY**

		ME - SEMESTER II (NEW) - • EXAMINATION - SUMMER 2010	
Subje	Subject Code: 2724110 Date: 24/05		2016
Subje	ect N	ame: Advances in Wireless Communication	
•		30 am to 01:00 pm Total Mark	s: 70
Instru		±	
	<b>1.</b> A	Attempt all questions.	
		Make suitable assumptions wherever necessary.	
	3. <b>1</b>	Figures to the right indicate full marks.	
0.1	( )		05
Q.1	(a)	Explain FDMA, TDMA, CDMA, & SDMA with their merits and demerits	07
	<b>(b)</b>	Explain Rician fading and Doppler with reference to local propagation	07
		effects with mobile radio.	
<b>Q.2</b>	(a)	Explain terrestrial link budget in details.	07
	<b>(b)</b>	Explain direct sequence modulation with the spreading equation and	<b>07</b>
		matched-filter receiver.	
		OR	
	<b>(b)</b>	List various spreading codes and explain any two in details.	07
Q.3	(a)	Explain multiple-access interference for CDMA.	07
_	( <b>b</b> )	Explain Rake receiver for CDMA over multipath channels	07
	. ,	OR	
<b>Q.3</b>	(a)	Explain code synchronization and channel estimation for CDMA.	<b>07</b>
	<b>(b)</b>	Explain IS-95 with channel protocol, pilot channel, downlink CDMA	<b>07</b>
		channels.	
Q.4	(a)	List techniques of "Space Diversity on Receive" and explain any one in	07
٧٠.	(4)	detail.	07
	<b>(b)</b>	Explain Alamouti code with all properties.	07
		OR	
<b>Q.4</b>	(a)	Explain differential space-time block coding	<b>07</b>
	<b>(b)</b>	Explain MIMO antenna systems with coantenna interference and basic	<b>07</b>
		baseband channel model.	
0.5	(a)	What is BLAST architecture? Explain D-BLAST and V-BLAST.	07
<b>V.</b>	(b)	Discuss 1) diversity-on-receive Vs diversity-on-transmit, 2) Space-time	07
	(,-)	block codes Vs V-BLAST, 3) Diversity order and Multiplexing gain.	
		OR	
Q.5	(a)	Explain frequency-hopped spread spectrum in detail.	07
~	<b>(b)</b>	Write short note on WCDMA	<b>07</b>

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