Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
ME – SEMESTER II (NEW) – • EXAMINATION – SUMMER 2016

Subject Code: 2722709   **Date: 27/05/2016**

Subject Name: ADVANCED DIGITAL COMMUNICATION

Time:10:30 am to 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 various communication channels and their characteristic.	**07**
	(b)	Explain convolution coding.	**07**
Q.2	**(a)**	Explain correlation receiver and matched filter receiver. Compare them.	**07**
	(b)	Explain Optimal Detection for a General Vector Channel.	**07**

<div align="center">OR</div>

	(b)	Write short note on signaling scheme with memory.	**07**
Q.3	**(a)**	Write short note on mathematical models for communication channels.	**07**
	(b)	Write short note on a comparison of digital signaling methods.	**07**

<div align="center">OR</div>

Q.3	**(a)**	Explain basic elements of communication system in detail.	**07**
	(b)	Write short note on Performance analysis for wireline and radio Communication systems.	**07**
Q.4	**(a)**	Write short note on Viterbi decoding.	**07**
	(b)	Write short note on adaptive linear equalizer.	**07**

<div align="center">OR</div>

Q.4	**(a)**	Explain linear equalization.	**07**
	(b)	Explain Nyquist criterion for ISI in detail.	**07**
Q.5	**(a)**	Explain turbo coding.	**07**
	(b)	What are the Performance characteristics of ML Estimators?	**07**

<div align="center">OR</div>

Q.5	**(a)**	Write short note on LDPC codes.	**07**
	(b)	Explain Maximum-Likelihood Carrier Phase Estimation.	**07**