2EC605

SEAT NO: _____

GANPAT UNIVERSITY

B. Tech. Semester VI (EC) CBCS (REGULAR) Examination, MAY/JUNE 2013

DIGITAL COMMUNICATION (2EC605)

Max. Time: 3Hrs.] **[Max. Marks: 70**

Instructions:

1. Attempt all questions.
2. Answers to the two sections must be written in separate answer books.
3. Figures to the right indicate full marks.
4. Assume suitable data, if necessary.
5. Question number three & six are compulsory

SECTION I

Q.1	(A)	Explain maximum likehood receiver structure with the help of suitable diagram.	8
	(B)	Define orthogonality in four different ways.	4

OR

Q.1	(A)	Define bandwidth in six different ways with the help of diagram.	6
	(B)	Derive and sketch the power spectra of (i) polar NRZ and (ii) bipolar NRZ signals.	6
Q.2	(A)	What do you mean by HDB3? Explain using suitable example.	6
	(B)	What is ISI and what is it that causes ISI?	2
	(C)	What are the drawbacks of ideal Nyquist channel?	3

OR

Q.2	(A)	What do you mean by timing extraction in line codes? Explain how time extraction is achieved in various line codes.	6
	(B)	The binary data stream 100011011 is applied to the input of a modified duo-binary system. Determine the output of the modified duo-binary coder and the corresponding receiver output.	5
Q.3	(A)	Write short note on Regenerative Repeaters.	6
	(B)	List and explain the properties of line codes.	6

Section: II

Q.4	(A)	Give seven advantages of digital communication.	7
	(B)	Using Schwarz inequality, derive the relation of match filter.	5
		OR	
Q.4	(A)	Give output display of CRO and spectrum analyzer for ASK, FSK and PSK.	6
	(B)	Write short notes on non coherent detection of digital modulated signal.	6
Q.5	(A)	What is importance of anti aliasing filter in PCM? Explain it.	6
	(B)	Explain quantization error in PCM.	5
		OR	
Q.5	(A)	What is E1 carrier system? How it is different from T1 carrier system?	6
	(B)	Draw the diagram of linear predictor and explain it.	5
Q.6	(A)	Give constellation diagrams of BPSK and QPSK. How decision region concept helps in their detection at the receiver end.	5
	(B)	Explain adaptive delta modulation.	5
	(C)	Draw the diagram of delta demodulator.	2

END OF PAPER