Student's Exam No. _____

GANPAT UNIVERSITY

B. Tech. Semester VI Electronics & Communication Engineering

Regular Examination May-June 2014

2EC 605: Digital Communication

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.

SECTION: I

Q.1	(A)	Explain any eight goals of communication engineer.	8
	(B)	What is baseband signal and how it is different from bandpass signal?	4
		OR	
Q.1	(A)	What is signal space and why do we need it? Explain in complete detail.	6
	(B)	Write short note on Eye diagram.	6
Q.2	(A)	Briefly explain the Nyquist's second criteria for combating Inter Symbol Interference.	6
	(B)	Using suitable example explain the HDB3 line coding.	6
		OR	
Q.2	(A)	For the following bit pattern, using Duobinary pulse find the encoded bit pattern and received samples when differential coding is used. **1 1 0 1 0 1 1 0 0 0 1 0 1 1 1 1 0 1 0**	6
	(B)	Explain Nyquist's first criterion for zero ISI.	6
Q.3	(A)	State and explain the desired properties of line codes.	6
	(B)	What is timing extraction? How is it achieved in different line codes?	5

SECTION: II

Q.4	(A)	Explain practical signal reconstruction (Interpolation).	6
	(B)	What is the difference between quantization error and quantization noise? Explain quantization noise in PCM.	6
		OR	
Q.4	(A)	How synchronization and signaling is achieved in TDM?	6
	(B)	What is DPCM? Explain generic DPCM transmitter.	6
Q.5	(A)	Compare ASK, PSK and FSK in complete detail.	6
	(B)	Can PSK detected coherently or non coherently? Give suitable reasons and explain.	6
		OR	
Q.5	(A)	Compare PAM, PWM and PPM in context of digital communication.	6
	(B)	Why matched filter is named so? Write short note on it.	6
Q.6	(A)	Which one is better modulation QPSK or 16 QAM? Give suitable reasons.	4
	(B)	Explain delta modulation. Give its short comings.	5
	(C)	State sampling theorem.	2

END OF PAPER