



Reg. No. :

Name :

**Sixth Semester B.Tech. Degree Examination, May 2013
(2008 Scheme)**

**Branch : Computer Science & Engg.
08.606 : DATA COMMUNICATION**

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions

1. Discuss the model for data communication.
2. Differentiate between time and frequency domain representations.
3. What is the purpose of cladding in an optical fiber.
4. We have an available bandwidth of 200 KHz which ranges from 100 to 300 KHz ?
What are the carrier frequency and bit rate if we modulate our data by using ASK with $d = 1$?
5. Explain HDB3 encoding scheme.
6. State and explain Nyquist's sampling theorem.
7. Discuss the principle behind amplitude modulation.
8. What is the role of the address field in a packet travelling through a datagram network ?
9. Distinguish between forward error correction and error correction by retransmission.
10. Differentiate between groundwave propagation and skywave propagation.



(10×4=40 Marks)



PART – B

Module – I

Answer **any one** question from **each** Module.

11. a) Explain the following terms :
- i) Bandwidth and channel capacity. 12
 - ii) Signal element and data element.
 - iii) Periodic and aperiodic signals.
 - iv) Phase and wavelength of a signal. 12
- b) Briefly discuss different types of noises. 8

OR

12. a) What are the three major classes of guided media ? Explain. 12
- b) Give Shannon's capacity for noisy channel. 8

Module – II

13. a) Explain the working of the following encoding schemes.
- i) 8B6T ii) MLT - 3 10
- b) Discuss Delta Modulation. 10

OR

14. a) Define digital hierarchy used by Telephone companies and list different levels of the hierarchy. 12
- b) Distinguish between multilevel TDM, multiple slot TDM and pulse stuffed TDM. 8



Module – III

15. a) In CRC, show the relationship between the following entities (size means the no. of bits)
- i) The size of the dataword and the size of the codeword.
 - ii) The size of the divisor and the remainder.
 - iii) The degree of the polynomial generator and size of the divisor.
 - iv) The degree of the polynomial and the size of the remainder. 12
- b) What kind of arithmetic is used to add data items in checksum calculations. 8

OR

16. a) Write short notes on Wireless communication. 12
- b) List the four major components of a packet switch and their functions. 8