

Roll No. ....

**2012**

**B. E. 3rd Semester (I.T.)**

**Examination – December, 2011**

**Digital & Analog Communication**

**Paper : EE- 217-E**

**Time : Three hours ]**

**[ Maximum Marks : 100**

*Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.*

**Note :** Attempt any *five* questions. All questions carry equal marks.

1. (a) Explain the Block diagram of Digital Communication. Also discuss advantages of Digital communication over Analog communication.  
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- (b) State and prove the following properties of Fourier transform :  
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  - (i) Time scaling,
  - (ii) Frequency shifting

2. (a) Discuss different types of signals with one example.

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- (b) Explain with block diagram of frequency Modulation. Derive expression for modulation Index.

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3. The bit sequence 1011101011 is to be transmitted using formats :

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(i) Unipolar RZ and NRZ

(ii) Bipolar RZ and NRZ

(iii) Split phase Manchester

(iv) Polar quaternary NRZ

(v) Draw all wave forms

4. Write short notes on :

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(i) Twisted pair

(ii) Coaxial cable

(iii) Fiber optics

(iv) Wireless medium with their advantages and disadvantages

5. (i) Discuss different communication" modes.

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(ii) What is difference between asynchronous and synchronous transmission.

(iii) What is PSTN ? Discuss briefly.

(iv) Discuss FDM with frame format.

6. Write short note on : 20

(i) Circuit switching and Packet switching.

(ii) Stop and wait protocol

7. What do you mean by error detection and correction code. Explain the Hamming code of seven bit. Find the correct code if the received code is 1011010. There are 4 parity bits and add parity is used. 20

8. Write short notes : 20

(i) Public Key cryptography,

(ii) Data compression,

(iii) Run length encoding,

(iv) Huffman encoding.

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