Exam.Code:0969
Sub. Code: 7047

2123

M.E. (Electronics and Communication Engineering)

First Semester

ECE-1105: Information Theory and Coding

(For UIET)

Time allowed: 3 Hours Max. Marks: 50

NOTE: *Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Unit.*

x-x-x

I. Attempt the following:-

a) Define coding efficiency.

b) What is hamming distance?

c) Channel capacity of a noise-free channel having 'm' symbols is _____(2^m, m^2, $Log_2 m$, m).

d) The Lempel-Ziv algorithm is _____(Fixed to fixed length/ Variable to fixed length/ Fixed to variable length/ Variable to variable length) algorithm.

e) Huffman coding technique is adopted for constructing the source code with _____ (maximum/minimum) redundancy. (5x2)

UNIT - I

II. a) Describe optimum detection: correlation, demodulator & matched filter.

b) Explain linear memory less modulation scheme. (6,4)

III. a) Explain lossy coding for discrete-time sources?

b) Describe channel models. (6,4)

IV. a) What is non-binary block codes? Also state its importance.

b) What is interleaving? (6,4)

UNIT - II

V. a) Explain Viterbi algorithm for MLSE.

b) What is feedback decision decoding? (6,4)

P.T.O.

VI. Explain the graph representation of LDPC codes. (10)

VII. Describe the following:-

a) RSA algorithm

b) TCM decoding (2x5)

x-x-x