| MMTE-005 (P) |

M.Sc. (MATHEMATICS WITH APPLICATIONS IN COMPUTER SCIENCE)

00048

Term-End Examination

December, 2011

MMTE-005 (P) : CODING THEORY

Time : 1½ hours   *Maximum Marks : 40*

Note : *This question paper has **one** question worth **30** marks. Remaining **10** marks are for **viva–voce**.*

1. (a) Write a C–program for computing CRC **10** with CRC polynomial.

$x^{10} + x^4 + x^3 + x + 1, \in \mathbb{F}_2 [x]$

   (b) Compute CRC for the following message **10** using the program

   1010111100001100110000111100 11.

   (c) Write a C program to encode a message **10** [1010] and decode the message. Also determine syndrome if the parity check matrix is.

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 1 & 0 & 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 & 0 & 1 & 1 \end{bmatrix}$$

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