No. of Printed Pages : 1

MMTE-005(P)

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

00366

Term-End Practical Examination

December, 2016

MMTE-005(P) : CODING THEORY

Time : $1\frac{1}{2}$ Hours *Maximum Marks : 40*

Note : *(i) This question paper has one question worth 30 marks.*

(ii) Remaining 10 marks are for the viva-voce.

1. (a) Write a 'C' program for computing CRC with CRC polynomial $x^9 + x^2 + 1$. Compute the CRC for the following message using the above program :

11100110110111001111110011

Assume that the messages are 8 bits long. *15*

(b) Write a 'C' program to find the minimum distance of the code over $\mathbf{Z}_5$ whose generator matrix is given by

$$G = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 3 & 1 & 0 \\ 0 & 1 & 0 & 0 & 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 0 & 0 & 2 & 2 & 0 \\ 0 & 0 & 0 & 1 & 0 & 4 & 0 & 2 \\ 0 & 0 & 0 & 0 & 1 & 1 & 4 & 2 \end{bmatrix}.$$ *15*