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

Term-End Practical Examination

June, 2025

MMTE-005(Set-I) : CODING THEORY

Time : 1½ Hours　　　　*Maximum Marks : 40*

Note : *(i)　The question paper has two questions worth 30 marks. Attempt both of them.*

　　(ii)　The remaining 10 marks are for viva-voce.

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1. Write a C program for computing the CRC with CRC polynomial $x^{12} + x^{11} + x^3 + x^2 + x + 1$. Assume that message length is 8 bit. Use it to find the CRC of the message :　　　15

    1101 1100 0111 1011 0011 0001

2. Write a program to find the sum and product elements in the finite field $F_2[x]/\langle x^5 + x^3 + 1 \rangle$. Use it to find the sum and product of the elements $x^2 + 1 + \langle x^5 + x^3 + 1 \rangle$ and $x^3 + x + \langle x^5 + x^3 + 1 \rangle$.

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