Name:.....
Roll No:.....

MAR ATHANASIUS COLLEGE OF ENGINEERING
KOTHAMANGALAM – 686666
(Govt. Aided Autonomous Institution)
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

B. TECH SECOND SERIES EXAMINATION, OCTOBER 2026

(S7 ECE A &B) ECT 453 ERROR CONTROL CODES

Max. Marks: 40 Duration: 1.5 Hours

PART A

Answer all questions. Each question carries 3 marks.

1. How the Reed Muller codes differ from other codes ,Write its important parameters. (CO3)

2. For an RM code with order (2,5) ,Find the code length, dimension and minimum distance. (CO3)

3. For a (3,1,2) convolutional code with g(1) = (1 1 0), g(2) = (1 0 1), g(3) = (1 1 1). Find the code word corresponding to the information sequence (1 1 1 0 1) using time domain approach (CO4)

4. Define constraint length and free distance of convolutional codes. (CO4)

PART B

Answer all questions. Each question carries 14 marks.

5. a. Obtain the generator vectors of RM (1,3) code. (7 Marks) (CO3)

   b. For an RM(1,4), find the minimum distance, code length, dimension and generate code words corresponding to the message 11010 (7 Marks) (CO3)

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6. a. With the help of neat block diagrams, explain turbo code encoder with and without puncturing. (CO4) (5 Marks)

b. For a (3,2,1) convolutional encoder ,g(1)=1 0 1 1 ,g(2) = 1 1 0 1 .Draw the encoder circuit and find the encoded output produced by the message sequence 11101 using state diagram. (CO4) (9 Marks)

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