MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

SECOND SESSIONAL EXAMINATION, OCTOBER 2026

S7 ELECTRICAL & ELECTRONICS ENGINEERING, A&B BATCH

EET473-Digital Protection of Power System

(S7_EA & EB)

Max. Marks 40 Time : 1.30 Hours

Answer all questions from Part A and Part B

PART A (5X3=15 Marks)

1. Discuss the concept of signal aliasing error. [CO3]
2. State and explain sampling theorem [CO3]
3. Discuss the advantages of FIR filters in digital signal processing. [CO4]
4. Analyze the role of digital filtering techniques in enhancing the performance of digital relays. [CO4]

PART B (2 X14=28 + 1X7=7 Marks)

5 a. Examine how the signal conditioning subsystem prepares power system signals for numerical relay operation. [CO3](8Marks)

5 b. Compare numerical relay with static relay. [CO3](6 Marks)

6 a. Derive the basic formulation of sample and first derivative method in sinusoidal wave-based algorithms [CO4](7 Marks)

6 b. By using the Least Square Method, explain how the impedance to the fault is determined in a numerical relay. [CO4](7 Marks)

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Students will be able to

CO3: Demonstrate the operation of digital relays in power system protection.
CO4: Acquire the knowledge to design signal processing algorithms for numerical relay and develop the concept of digital filters.

VISION

Endeavour to Ensure Excellence

MISSION

Mould technically competent and morally strong Engineers

Achieve dynamic leadership through quality Education

Cater the needs of industry and community through Emulation

Empower the students to serve the nation with Dedication