MAR ATHANASIUS COLLEGE OF ENGINEERING, KOTHAMANGALAM
(Govt aided, Autonomous)
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
SECOND SERIES EXAMINATION OCTOBER 2026
B24EE3P15 ELECTRONIC MATERIALS

S5 EA&EB

Time: 1.5hrs **Max Marks: 40**

PART A
Answer all questions,Each carry 3marks (3*4=12marks)

1. Analyze the effects of impurities in the properties of magnetic materials. (CO3)
2. Comment on why transformer oil is preferred as a good insulating material. (CO3)
3. Determine the power loss due to hysterisis in a transformer core of 0.01m3 volume at 50 Hz frequency, given the area of loop as 600 J/m^2. (CO4)
4. Differentiate between passive and active components. (CO4)

PART B
Answer all questions, Each carry 14marks (2*14=28 marks)

5. a) What are the properties which make Bakelite a good insulating material? (6 marks)

   b)Analyze the magnetisation curve and comment on the parameters that affect the properties of a magnetic material. (8marks)(CO3)

6. a) Explain its significance of Meissner effect in superconductivity.? (6 marks)

   b)Describe the different types of resistors based on the materials used for their manufacture. (8marks) (CO4)

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CO3: Understand the characteristics of the magnetic and super conductive materials
CO4: Analyze the passive components and special purpose materials for applications associated with electrical and electronic systems

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