

Reg. No. : **E N G G T R E E . C O M**

**Question Paper Code : 51004**

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2024.

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Fifth/Sixth Semester

Electrical and Electronics Engineering

**EE 3036 — SUSTAINABLE AND ENVIRONMENTAL FRIENDLY HV  
INSULATION SYSTEM**

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

**PART A — (10 × 2 = 20 marks)**

1. What are importance of sustainable energy?
2. What is carbon print?
3. What are the gaseous insulating materials?
4. What are the characteristics of a gas mixture?
5. Define Organic oil.
6. What are the properties of ester oil?
7. What is solid dielectric material?
8. What are the properties of solid dielectric?
9. What is the ISO standard for green building?
10. What is the service life of insulation materials?

**PART B — (5 × 13 = 65 marks)**

11. (a) Discuss about global warming and it's impact.

Or

- (b) Explain the role of product requirements in sustainable product development.

12. (a) Explain in detail about types of alternate gases.

Or

(b) Explain in detail about the sources and its properties of gaseous mixtures.

13. (a) Describe about the factors affecting dielectric strength of liquid insulating materials?

Or

(b) Explain in detail about the vegetable oils dielectric and its properties.

14. (a) Explain the various effects of solid dielectric between plates of capacitor.

Or

(b) Explain in detail about an alternate sources of environmental friendly solid dielectric.

15. (a) Explain the various standards for green insulation systems.

Or

(b) Explain the various testing methods for green insulation systems.

PART C — (1 × 15 = 15 marks)

16. (a) Explain the SF<sub>6</sub> gas and its hazardous environmental effects.

Or

(b) Explain the usage and disposal of alternate insulation systems.