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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

FIRST SEMESTER M.TECH DEGREE EXAMINATION

Electrical and Electronics Engineering

(Power Systems)

04 EE 6411 Advanced Relaying and Protection

Max. Marks : 60   Duration: 3 Hours

Part A - Answer All Questions (Each Question carry 3 Marks)

1. Give the classification of the relays based on the technology used.
2. What is the relevance of wavelet algorithm in relaying techniques?
3. Differentiate between instantaneous type and inverse time overcurrent relays.
4. Briefly explain the need of protecting alternators from earth faults.
5. Briefly explain the protection scheme employed in busbars.
6. Give briefly the superior characteristics of numerical relays.
7. What is reclosing of circuit breakers? Why is it important for the protection of power system?
8. What is fault tree analysis (FTA)?

Part B – Answer All Questions (Each Question carry 6 Marks)

9. Explain the need of power system to be divided into zones of protection. What are primary and backup protections?

Or

10. Explain the transient behavior of CTs and how CT performance is affected by the same?

11. Explain briefly the fault sensing and data processing units used in static relays.

Or

12. Explain the operating principle and construction of thermal relays with neat sketches.

13. What are directional relays? Explain its working with neat sketch.

Or

14. Explain briefly the protection provided by reactance relays.

15. With schematic representation explain how stator of an alternator is protected from inter-turn faults. Where is it applied?

Or

16. A three-phase 33,000/6,600 V transformer is connected in star/delta and the protecting current transformer on the low-voltage side has a ratio of 300/5. What will be the ratio of the CT on the high-voltage side?

17. What is system grounding? What are the techniques employed in system grounding.

Or

18. With necessary block diagram explain the working or numerical type relays.

19. Discuss the frequency load shedding scheme employed in power systems.

Or

20. Discuss how SCADA based protection system is employed in power system.