

**B.Tech. – VIEP – ELECTRICAL ENGINEERING
(BTCLVI)**

Term-End Examination

00192 **December, 2017**

BIEE-023 : SWITCHGEAR AND PROTECTION

Time : 3 hours

Maximum Marks : 70

Note : Attempt any **seven** questions. All questions carry equal marks.

1. (a) Explain the phenomenon of “Arc Interruption” in circuit breakers. 5
(b) What are the various circuit breaker ratings ? Explain each in brief. 5
2. Define the terms ‘Restriking Voltage’ and ‘Recovery Voltage’ in the context of a circuit breaker and obtain the expressions for restriking voltage and RRRV. 10
3. What are the functions of a Lightning Arrester ? Explain different types of lightning arresters. 10
4. Explain any two methods of Neutral Grounding with their relative merits and demerits. 10

5. Describe the importance of Protective Relaying, clearly. How does the concept of protective zones help in designing of protective relaying ? Explain with the help of one example. 10
6. (a) What are the advantages of Static relays over Electromagnetic relays ? 5
- (b) Explain the various overcurrent relay characteristics. 5
7. Describe the restricted earth-fault protection scheme used to protect an alternator or transformer winding against phase to ground fault. Why is it difficult to protect the complete winding ? Obtain an expression for percentage of winding that remains unprotected. 10
8. Explain the percentage differential protection scheme for a transformer. 10
9. (a) Explain the construction and operation of Distance Relay. 5
- (d) Define Basic Insulation Level (BIL) and explain insulation coordination. 5
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