

Duration – 3 Hours

Total Marks- 80

- N.B.:-** (1) Question No.1 is compulsory.
(2) **Attempt** any **Three** questions out of remaining **Five** questions.
(3) Assume suitable data if necessary and justify the same.

- Q 1.** Answer the following questions. **20**
A) Compare static relay with electromagnetic relay.
B) Explain the meaning of time grading and current grading protection system.
C) Explain making and braking capacity of circuit breaker.
D) Compare fuse with circuit breaker.
- Q 2 a)** Explain TRV and RRRV. Derive an expression for restriking voltage. **10**
Q 2 b) Explain concept of phasor measurement unit and its use. **10**
- Q 3 a)** Explain with neat diagram the construction and working of SF₆ Circuit Breaker. **10**
Q 3 b) Explain with neat diagram the working of harmonic restraint relay. **10**
- Q 4 a)** Explain rotor side protection for generator. **10**
Q 4 b) Explain power line carrier communication used for protection of transmission line. **10**
- Q 5 a)** Explain in detail the difference between impedance relay, reactance relay with the help of their characteristic. **10**
Q 5 b) Draw and explain the construction and working of pantograph isolator. Explain why isolator cannot be operated on load. **10**
- Q 6 a)** Explain the constructional details of HRC fuse. How arc is extinguished in HRC fuse? **10**
Q 6 b) Explain in over reach & under reach in impedance relay and state the measure to overcome it. **10**
