

Elect.
contacts

T.E. Electrical II CBGS

Protection & Surge

QP Code : 14892

(3 Hours)

[Total Marks : 80]

- N.B. : (1) Question No. 1 is compulsory.
(2) Attempt any three questions from remaining five questions.
(3) Figures to right indicate full marks.

1. Attempt the following :—

- | | |
|---|----|
| (a) Draw a typical protection circuit and explain the phenomena of fault clearing. | 5 |
| (b) Mention at least five difference between a fuse and a CB. | 5 |
| (c) Compare the ratings like voltage range, current range, number of poles and breaking capacities of MCB, MCCB, ELCB. | 5 |
| (d) Explain the protection provided for radial feeder. | 5 |
| | |
| 2. (a) Explain the need and different techniques of providing negative phase sequence protection for Alternators. | 10 |
| (b) Explain the differential protection provided for different types of bus zones. | 10 |
| | |
| 3. (a) Explain the directional comparison and phase comparison method of carrier current protection. Write its applications. | 10 |
| (b) Explain the working principle of directional overcurrent protection along with their types and application. | 10 |
| | |
| 4. (a) Why there is need for 3 types of distance relays ? Explain each one along with their application. | 10 |
| (b) Explain the working principle of Air Circuit Breaker along with its ratings and application. | 10 |
| | |
| 5. (a) What is restricted Earth fault protection. What is the need, how and where it is provided. | 10 |
| (b) Explain the working principle of Buchholz relay showing its location and justify why it cannot be used in dry type transformer. | 10 |
| | |
| 6. Write short notes on :— | |
| (a) Instrument Transformers required for protection | 5 |
| (b) Contactors | 5 |
| (c) Isolators | 5 |
| (d) PRC fuse | 5 |