



- (a) Which circuit breaker is used for house application? Write short note on its operation. **07**
- (b) Why (1) fuse (2) relay (3) switch is used in Electric Circuit? Explain. **07**
- Q-3 Attempt all questions (14)**
- (a) With neat sketch describe the arc extinction process in air break circuit breaker. **07**
- (b) Draw the neat sketch of single pressure puffer type  $SF_6$  circuit breaker and explain the process of arc extinction. **07**
- Q-4 Attempt all questions (14)**
- (a) State the name of different types of fuse. Explain any one of them. **07**
- (b) Explain the principle of core balance CT for earth fault protection. **07**
- Q-5 Attempt all questions (14)**
- (a) Draw the sketch and explain the working principle of the below relays. **07**  
     i) Attracted Armature Type Relay      ii) Balanced Beam Relay
- (b) Write short notes on Bulk oil circuit breaker. **07**
- Q-6 Attempt all questions (14)**
- (a) Draw the over current protection connection with three over current relays and explain its principle of operation.
- (b) Draw and explain the principle of circulating current Differential (MERZ-PRIZE) protection.
- Q-7 Attempt all questions (14)**
- (a) Draw the R-X diagram of plain impedance relay and explain its characteristics on R-X plane. **07**
- (b) Draw the structure of Buchholz relay and explain its principle of operation. **07**
- Q-8 Attempt all questions (14)**
- (a) Explain how overload protection is achieved for induction motor. **07**
- (b) Draw the neat sketch of differential protection for busbars and explain its operating principle. **07**

