

(Time: 3 Hours)

[Total marks: 80]

N.B:- (1) **Question 1 is compulsory**

(2) Solve any **three** questions from remaining **five** questions.

(3) Figures to the right indicate **full** marks.

- Q 1. Answer the following questions. **20**
- Explain the importance of different types of instrument transformers
 - What is the role of isolator in power system? Explain.
 - What are the difficulties associated with differential protection
 - Explain primary, back up and remote backup protection of relay.
- Q 2 a) What is working principle of distance relays. Differentiate between different types of distance relays. **10**
- Q 2 b) Explain with neat diagram construction and working principle of MOCB. **10**
- Q 3 a) Explain construction & working of Air circuit breaker. **10**
- Q 3 b) Name the different types of fault that occur in transformer. Explain bucholz relay for protection of transformer. **10**
- Q 4 a) Explain with neat construction any one type of Induction relay. **10**
- Q 4 b) Explain desirable qualities of protection scheme required for efficient operation **10**
- Q 5 a) What are the different types of fault that occur in Induction motor. Explain motor protection against single phasing. **10**
- Q 5 b) Explain advantages of static relay over electromagnetic relays. **10**
- Q 6 a) Discuss various properties of SF₆ gas that make it suitable for arc quenching and explain SF₆ CB in detail with suitable diagram. **10**
- Q 6 b) Explain REF protection for alternator. How 100% winding is protected in an alternator. **10**
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