Duration – 3 Hours   **Total Marks assigned to the paper- 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) Define CT burden.	
	b) Explain the meaning of time grading and current grading protection system.	
	c) Explain the working of ELCB.	
	d) Discuss the properties of SF6 Gas.	
Q 2 a)	Explain construction and working of HRC fuse with the neat diagram.	**10**
Q 2 b)	Explain construction and working of induction disc relay and derive its torque equation.	**10**
Q 3 a)	Explain the need of biasing in differential protection. Draw a schematic diagram for differential protection of three phase transformer and explain in brief.	**10**
Q 3 b)	Explain motor protection against single phasing with neat diagram.	**10**
Q 4 a)	A 11 KV, 5000 KVA generator is provided with restricted earth fault protection. The percentage of winding protected against phase to ground fault is 80%. The relay setting such that it trips for 25% out of balance. Calculate the resistance to be added in neutral to ground connection.	**10**
Q 4 b)	Compare electromagnetic relay with static relay.	**10**
Q 5 a)	List the different types of feeders in power system and explain the types of protections.	**10**
Q 5 b)	Explain the working of impedance relay.	**10**
Q 6 a)	Explain construction and working of air circuit breaker.	**10**
Q 6 b)	Explain the function and operation of Buchholz's relay	**10**

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