

LOW VOLTAGE SWITCHGEAR (LVSG) - BASIC

DAY	TOPICS	DESCRIPTION	HOUR DURATION	OUTCOME	DAY DURATION	
Day 1	Low Voltage Switch Gear (LVSG) basics	Industrial Electrical Safety (I.E rules, Industrial safety precautions & Electrical warns & signs)	1 Hrs	Forenoon	After completing the session, Trainees able to understand about Industrial Electrical Safety (Rules and Precautions), brief detail about Power systems and Low voltage switchgear devices	8 Hrs
		Basic of Power systems (Introduction and Classification)	1 Hrs			
		Components of Power systems (Transformers and Generators - Fault Calculations & Parallel operations)	1 Hrs			
		Distribution components (Circuit breakers (Icm,Icu,Ics and Icw) & Moulded case circuit breakers)	1 Hrs			
		Discrimination and Cascading concepts	1 Hrs	Afternoon		
		Harmonics and Interlocking schemes	1 Hrs			
		Timers, Relays and Residual Current circuit breakers (Types and Principle of operations)	2 Hrs			
Day 2	High Rapture Cartridge (HRC) Fuses	Operation, Construction and and Selection	1 Hrs	Forenoon	After completing the session, Trainees able to understand about functionalities and operation of HRC fuses, Contactors and Overload relays & they can able to do practical's on these equipment's	8 Hrs
		Arc Quenching, Effects and Mounting options	1 Hrs			
		Accessories and Applications	1 Hrs			
	Contactors	Basic of Contactors (Terms,Parts,types and sizes)	1 Hrs	Afternoon		
		Magnetic system and Contact system	1/2 hrs			
		ARC chamber and Coil systems	1/2 hrs			
		Maintainance,Accessories and Applications	1 Hrs			
	Over Load Relay	Types and Versions	1/2 hrs	1 Hrs		
		Tripping Characteristics and Applications	1 Hrs			
Exercise	Hands on Practice on Type 2 Coordination kit (Contactors & Over load Relays)	1/2 hrs				

Day 3	Motor Protection Circuit Breaker (MPCB)	Basic of MPCB (Types, Versions and Accessories)	1/2 hrs	Forenoon	After completing the session on, Trainees able to understand about Motor Protection circuit breakers, MCCB (3VA & 3VT) & they can able to do practical's on these Protecting devices	8 Hrs	
		Functions and Working principle	1/2 hrs				
		Technical specifications and Tripping characteristics	1/2 hrs				
		Fault settings and Applications	1/2 hrs				
	Exercise	Hands on Practice on Type 2 Coordination kit (MPCB)	1/2 hrs				
	Moulded Case Circuit Breaker (MCCB) - 3VA	Basics of MCCB (Range, Ratings, Poles and Breaking capacity)	1/2 hrs				
		Operation, Trip units and Communication Features	1/2 hrs				
		Internal accessories, Motor operator and Status indications	1/2 hrs				
		Technical details and Ambient conditions	1/2 hrs				
	Exercise	Hands on Practice on MCCB (3VA)	1/2 hrs				Afternoon
	Moulded Case Circuit Breaker (MCCB) - 3VT	Basics of MCCB (Specifications, Range and Features)	1/2 hrs				
		Characteristics and Trip units	1/2 hrs				
Rotary and Motorized operating mechanism		1/2 hrs					
Internal accessories, Switch disconnections and Applications		1/2 hrs					
Exercise	Hands on Practice on MCCB (3VT)	1/2 hrs					
Day 4	Air Circuit Breaker (ACB) - 3WL	Basics and Brief of Front view of ACB	1 Hrs	Forenoon	After completing the session, Trainees able to understand about Air circuit breakers (3WL) & they can able to do practical's on these Protecting devices	8 Hrs	
		Name plate & Rating plate, Breaking capacity and Applications	1 Hrs				
		Rack In, Rack out and Ready to close Operations	1 Hrs				
		Rating plug, Characteristics curves, Core components and Principle of operation	1 Hrs				
		Afternoon	Configuration of trip units and Manual function testers	1 Hrs			
			Maintenance and Communications solutions	1 Hrs			
			Locking and Sealing devices	1 Hrs			
			Exercise	Hands on Practice on ACB (3WL)			1 Hrs
Day 5	Air Circuit Breaker (ACB) - 3WT	Basics and Brief of Front view of ACB	1 Hrs	Forenoon	After completing the session, Trainees able to understand about Air circuit	8 Hrs	
		Range, Core components, Configuration and Characteristics	1 Hrs				

		Rating plate and Name plate details	1 Hrs	Afternoon	breakers (3WT) & they can able to do practical's on these Protecting devices	
		Rack In, Rack out and Ready to close Operations	1 Hrs			
		Mechanical interlock and Mechanical erosion indicator	1 Hrs			
		Trip units and Locking devices	1 Hrs			
		Ground fault protections, Advantages and Applications	1 Hrs			
	Exercise	Hands on Practice on ACB (3WT)	1 Hrs			
Total						40 Hrs