ASSESSMENT AREAS FOR ELECTRICAL WORKER WRITTEN & ORAL INTERVIEWS

Licence Class	Areas of Competency
C2	• Knowledge of national regulations, codes and standards governing electrical installation work. • Installation of **low voltage**, **single-phase** electrical systems in buildings up to **two storeys** in height, excluding factories and places designated for public entertainment. • Basic principles of electrical circuits (AC, DC, voltage, current, resistance, power, energy, power triangle and basic circuits). • Knowledge of electrical terms such as diversity factor, utilization factor, power factor and protection discrimination/selectivity. • Calculation of power, current and voltage at low voltage, single phase. • Lighting switches (one-way, two-way and intermediate) • Power/socket circuits (radial and ring main) • Sizing and installation of protective devices. • Identification and use of special protective devices. • Instrumentation and types of electrical measuring instruments • Selection of cables (current-carrying capacity) and colour coding. • Rating and selection of protective devices (fuses, MCB, MCCBs, RCD, etc) • Selection of luminaires • Testing and commissioning of domestic electrical installation. • Earthing in domestic installations. • Electrical safety requirements, including how to perform first aid.
C1	• Areas of competency covered under **Class C2.** • Installation of **Low Voltage**, **three-phase** electrical systems in buildings up to four storeys in height, excluding factories and places designated for public entertainment. • Calculation of power, current and voltage at low voltage, three phase installations. • Cable sizing and sizing of protective devices. • Identification and use of special protective devices. • Earthing in domestic and small commercial installations. • Power factor: causes, demerits, correction and sizing of PFC devices. • Three phase electrical machines: Motors, starting methods, speed control and protection. • Initial and periodic inspection and testing of electrical installations.

Licence Class	Areas of Competency
B	• Areas of competency covered under **Class C1.** • Electrical installation for **multi-storey buildings** including lightning protection and earthing. • Electrical installation, control and protection in **industrial premises (factories)** • Calculation of power, current and voltage at **medium voltage** installations. • Cable sizing and sizing of protective devices. • Electrical installation in **specialized installations** such as petrol stations, cold rooms, swimming pools etc • Electrical installation in **public facilities** such as schools, hospitals etc. • Installation of hybrid and backup systems (changeover mechanisms). • Earthing in the above installations. • Power factor: causes, demerits, correction and sizing of PFC devices. • Installation at **medium voltage**: control, protection, earthing, installation of ground mounted and pole transformers. • Initial and periodic inspection and testing of electrical installations.
A1	• Areas of competency covered under **Class B.** • Calculation of power, current and voltage at **medium and high voltage** installations. • Installation at **high voltage**: control, protection and metering systems, high voltage substation earthing, installation of power transformers. • Initial and periodic inspection and testing of electrical installations.
A2 (Generators)	• Knowledge of national regulations, codes and standards governing electrical installation work. • Basic principles of electrical circuits (AC, DC, voltage, current, resistance, power, energy, power triangle and basic circuits). • Knowledge of electrical terms such as diversity factor, utilization factor, power factor and protection discrimination/selectivity. • Calculation of power, current and voltage at low voltage, single phase. • Sizing and installation of protective devices. • Instrumentation and types of electrical measuring instruments • Electrical installation for standby generators. • Sizing of standby and prime generators. • Control, protection and maintenance of generators. • Basic knowledge of electrical motors, control and protection. • Earthing for generators. • Initial and periodic inspection and testing of electrical installations.

Licence Class	Areas of Competency
A2 (Lifts and Escalators)	• Knowledge of national regulations, codes and standards governing electrical installation work. • Basic principles of electrical circuits (AC, DC, voltage, current, resistance, power, energy, power triangle and basic circuits). • Knowledge of electrical terms such as diversity factor, utilization factor, power factor and protection discrimination/selectivity. • Calculation of power, current and voltage at low voltage, single phase. • Sizing and installation of protective devices. • Instrumentation and types of electrical measuring instruments. • Electrical installation for lifts, escalators, moving walkways. • Control and protection of lifts and escalators. • Maintenance for lifts, escalators, moving walkways. • Initial and periodic inspection and testing of electrical installations.

Definitions

Voltage Levels *(as defined in the Energy Act, 2019):*

- *Low Voltage: Not exceeding 1,000V under normal conditions.*
- *Medium Voltage: Exceeds 1,000V but does not exceed 33,000V under normal conditions.*
- *High Voltage: Exceeds 33,000V under normal conditions.*

Places of Public Entertainment - *Means a buildings or places used or intended to be used for conducting public entertainment or public meetings such as educational institutions, airports, hospitals/clinics, transport terminus, conference halls, cinema halls, theatres, clubs and bars.*

Storey - *Means a level or floor of a building, and this includes floors located below the ground floor in the total count of storeys. For example—*

- *A building with one level or floor is considered a single storey building.*
- *A building with a basement, a ground floor, and one upper floor is considered a three-storey building.*