**Module 3 Activity Worksheet 9**

Discuss the requirements for PELV circuits in terms of insulation and separation from other circuits. (Refer to AS/NZS 3000:2018 clause 7.5.5 for guidance.)

Refer to AS/NZS 3000:2018 Clause 7.5.7 to 7.5.11 to complete the following exercise:

1. Voltage drop at any point in an extra-low voltage electrical installation shall not exceed \_\_\_\_\_\_\_\_% of the nominal value when all live conductors are carrying the circuit-operating current.
2. The supply to an extra-low voltage electrical installation shall be controlled by a \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ or switches operating in all unearthed conductors, unless it is fed from a LV supply where a main switch will disconnect supply.
3. Every extra-low voltage circuit shall be individually protected at its origin against overload and short-circuit currents by a protective device that complies with clauses \_\_\_\_\_\_\_ and \_\_\_\_\_\_\_ .
4. List the 3 requirements that plug and socket-outlet devices, including installation couplers, need to comply to when used for SELV and PELV circuits:
5. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
8. Conductors and insulation of cables used for extra-low voltage electrical installations shall be \_\_\_\_\_\_\_\_\_\_\_\_\_ for the intended purpose.

Refer to AS/NZS 3000:2018 clause 8.3.3.2 to complete the following question:

1. Testing shall be carried out on parts of electrical installations designed to operate at ELV as follows:
2. Continuity of the earthing system for PELV circuits in accordance with Clause \_\_\_\_\_\_\_\_\_\_\_\_\_ .
3. Insulation resistance in accordance with Clause \_\_\_\_\_\_\_\_\_\_\_\_\_ .
4. \_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ circuits in accordance with Clause 8.3.7.
5. Correct circuit connections in accordance with Clause \_\_\_\_\_\_\_\_\_\_\_\_\_ .

**Self-directed Learning**

Discuss the consequences of non-compliance with the requirements for extra-low voltage electrical installations, as per Clause 7.5 of the AS/NZS Wiring Rules.