# Unit 6 Grading criteria

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| **To achieve a pass grade the evidence must show that the learner is able to:** | **To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:** | **To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:** |
| P1 use DC circuit theory to calculate current, voltage and resistance in DC networks | M1 use Kirchhoff’s laws to determine the current in various parts of a network having four nodes and the power dissipated in a load resistor containing two voltage sources | D1 analyse the operation and the effects of varying component parameters of a power supply circuit that includes a transformer, diodes and capacitors |
| P2 use a multimeter to carry out circuit measurements in a DC network | M2 evaluate capacitance, charge, voltage and energy in a network containing a series-parallel combination of three capacitors | D2 evaluate the performance of a motor and a generator by reference to electrical theory. |
| P3 compare the forward and reverse characteristics of two different types of semiconductor diode | M3 compare the results of adding and subtracting two sinusoidal AC waveforms graphically |  |
| P4 describe the types and function of capacitors |  |
| P5 carry out an experiment to determine the relationship between the voltage and current for a charging and discharging capacitor |
| P6 calculate the charge, voltage and energy values in a DC network for both three capacitors in series and three capacitors in parallel |
| P7 describe the characteristics of a magnetic field |
| P8 describe the relationship between flux density (B) and field strength (H) |
| P9 describe the principles and applications of electromagnetic induction |
| P10 use single phase AC circuit theory to determine the characteristics of a sinusoidal AC waveform |
| P11 use an oscilloscope to measure and determine the inputs and outputs of a single phase AC circuit |