Question #53829, Physics / Electric Circuits |

A portable TV uses a 12V, 3A-h battery over a period of 5.5 hours when the battery is empty. What is the average current drawn during this period? What is energy expended by the battery during this period?

Solution: The average current drawn can be found:

I = 3 A-h/5.5 h = 0.55 A

The energy expended equals:

Q = Pt, where P – the power, t – the time being of 5.5 h (19800 s).

The power can be found:

P =IU, where I – the average current drawn and U – the voltage.

Thus, Q = IUt = 0.55 A × 12 V × 19800 s = 130680 J = 130.68 kJ

Answer: The average current drawn is 0.55 A

expended energy is 130.68 kJ