

Tutorial Questions (for ET1005 PEEE I Chapter 4)

1. If an appliance uses 300 W and is operated continuously for 30 days, how many kilowatt-hours does it consume?
2. What is the resistance value of a load if it takes a current of 2 A from a 75 V source?
3. How much power is consumed by an electric heater which works on 120 V and draws 3 A of current?
4. Calculate the power dissipation in a $56\ \Omega$ resistor which is connected across the terminals of a 1.5 V battery.
5. How much resistance should a resistor have if it is required to handle 2 A of current and to dissipate 100 W of power?
6. Determine the energy used in two minutes by a $10\ \Omega$ resistor connected across a 12 V source.
7. A $6.8\ \text{k}\Omega$ resistor is required to carry a current of 10 mA. What should its power rating be?
8. An application requires a resistor to dissipate a power of about 8 W. What should be the minimum power rating of this resistor? Why? Assume that the following standard power ratings are available: 3 W, 5 W, 8 W, 12 W, 20 W.

Answers

1. 216 kWh
2. $37.5\ \Omega$
3. 360 W
4. 40.2 mW
5. $25\ \Omega$
6. 0.48 Wh or 1728 J
7. 1 W
8. Use a 12 W resistor