

Answer all the questions on this sheet. Do any rough work in the back of your exercise book.

1. What two of these units can energy be measured in?
 A newtons
 B joules
 C kilowatts
 D watts
 E kilowatt hours [2]
2. Which two of these formulae are correct?
 A energy transferred = power x time
 B potential energy = power x height
 C potential energy = weight x height
 D energy transferred = power ÷ time
 E energy transferred = time ÷ power [2]
3. Heat can be transferred from one place to another. Match the description to the method of heat transfer.
 (i) The movement of volumes of gases or liquids ___
 (ii) Infra-red waves ___
 (iii) Vibration of particles in a solid ___
 A conduction
 B convection
 C radiation [3]
4. Metal rods are heated in a Bunsen flame. The ends of the rods furthest from the flame get hot mainly because
 A atoms in the rod closest to the flame transfer energy along to the next atom in the rod.
 B the flame heats the air. This travels to the other end and heats the rod.
 C the metal rods are insulators.
 D there are convection currents in the rod.
 E electrons in the rod closest to the flame transfer energy along to the next electrons in the rod. [1]
5. Heat energy from the Sun is transferred to the Earth by
 A conduction
 B convection
 C radiation
 D mainly conduction, with some radiation
 E mainly radiation, with some convection [1]
6. The following devices are designed to transfer electrical energy into other forms. Match the device to the form of energy. (Forms of energy can be used more than once.)
 (i) radio ___
 (ii) electric light bulb ___
 (iii) scalextric car ___
 (iv) milk float ___
 (v) electric iron ___
 A kinetic
 B light
 C sound
 D thermal (heat) [5]
7. We measure the electricity used at home in kilowatt hours and not joules because
 A kilowatt hours measure power
 B kilowatt hours are larger units
 C joules measure power
 D joules are larger units [1]
- The cost of using an electrical device is given by :
 cost = number of Units x cost per Unit
 The number of Units used by a device is given by :
 number of Units = power (in kW) x time (in hours).
8. An electric heater has a power of 2 kW. It is switched on for 3 hours. How many Units of electricity does it use?
 A 6,000
 B 0.66
 C 6
 D 1.5
 E 666 [1]
9. Fred Derf's electricity meter reads 1234 on 10th December. Three months later it reads 2121. How many Units of electricity has he used?
 A 3355
 B 2617314
 C 887
 D 100 [1]
10. How many kilowatt hours has Fred Derf used?
 A 3355
 B 2617314
 C 887
 D 100 [1]
11. An electric shower used 2.5 kW h of electricity in a day. If electricity costs 8p per Unit, what did the shower cost to run?
 A £20.00
 B 20p
 C 20,000p
 D £2.00 [1]
12. A crane lifts a load of 30,000 N through a distance of 10 m. What gravitational potential energy does the load gain?
 A 3,000 J
 B 3,000 N/m
 C 300,000 N
 D 300,000 W
 E 300,000 J [1]

Total marks _____ out of 20.