

Transfer of Thermal Energy – 2022 Nov O Level 5054

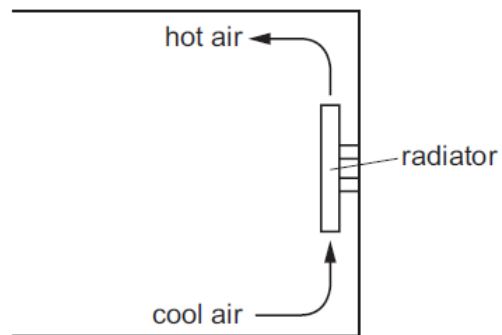
1. Nov/2022/Paper_12/No.17

What is a process of heat transfer that can take place in a vacuum?

- A conduction
- B convection
- C evaporation
- D radiation

2. Nov/2022/Paper_12/No.18

The diagram shows a radiator heating the air in a room.



What is the name of this process?

- A conduction
- B convection
- C evaporation
- D expansion

3. Nov/2022/Paper_22/No.3

Fig. 3.1 shows a man standing underneath an outdoor heater on a cold evening.

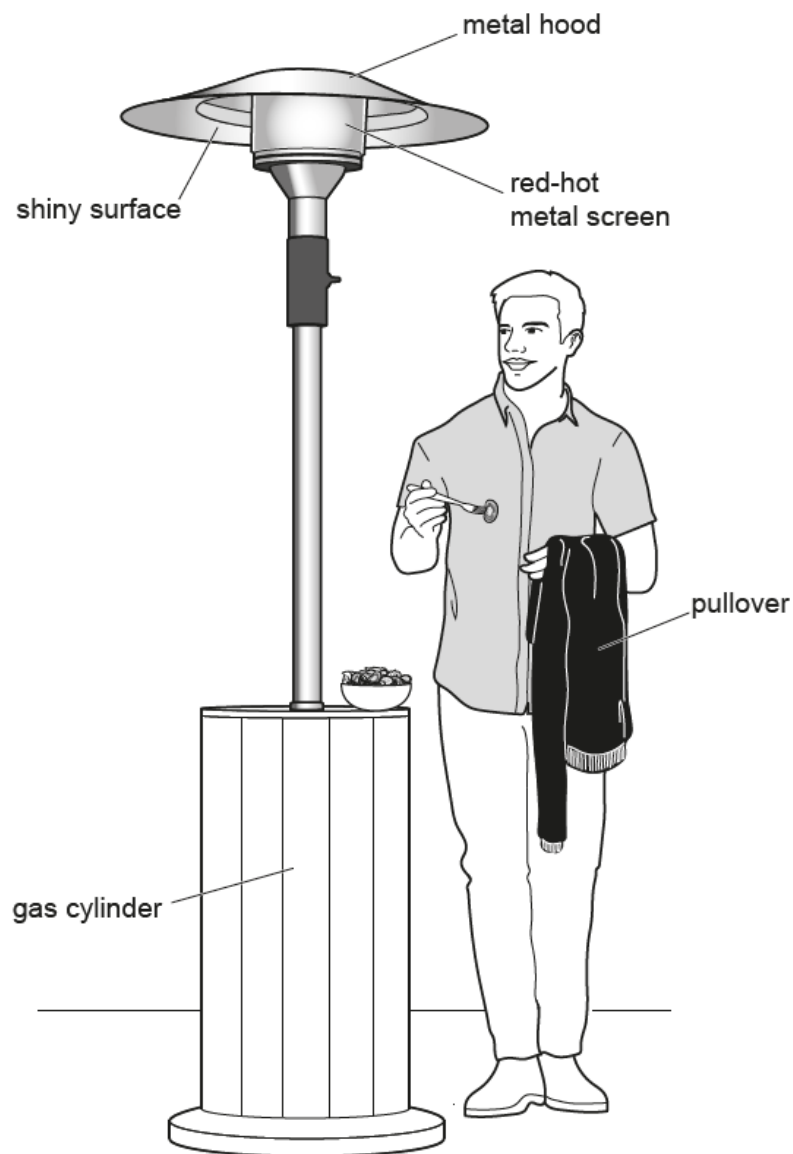


Fig. 3.1

Gas in the cylinder at the base of the heater is the fuel for the heater. When the heater is operating, the gas travels to the top of the heater where it burns.

(a) State the form of energy stored in the gas that is transferred by the heater.

..... [1]

(b) A metal screen surrounding the burning gas is heated by the burning gas until it is red-hot. The hot metal screen warms the man who is standing underneath it.

(i) Describe how thermal energy in the red-hot metal screen is transferred to the man and how it warms him.

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..... [3]

(ii) At the top of the heater is a metal hood that has a shiny lower surface.

Explain why this makes the energy transfer from the metal screen more efficient.

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(iii) The air temperature decreases and the man puts on a black pullover.

Explain **one** way in which wearing the black pullover helps to keep the man warm.

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..... [2]

[Total: 8]