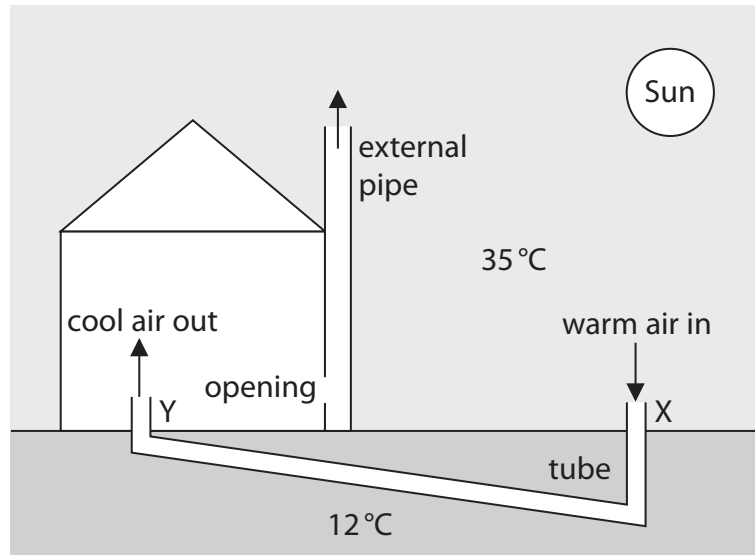


12 The diagram shows a building in a hot climate.

The air temperature is 35°C and the underground temperature is 12°C .

The external pipe is heated by the Sun. This causes cool air to enter the house through a tube in the ground.



(a) How is energy transferred to the external pipe from the Sun?

(1)

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

(b) Explain why air moves upwards through the external pipe.

(3)

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(c) Warm air enters the tube at point X.

Cool air leaves the tube at point Y.

Explain how the air is cooled as it travels through the tube.

(3)

(d) The external pipe is painted to increase the air flow through the building.

Explain what colour of paint would give the greatest increase in air flow.

(3)

(Total for Question 12 = 10 marks)

TOTAL FOR PAPER = 110 MARKS

