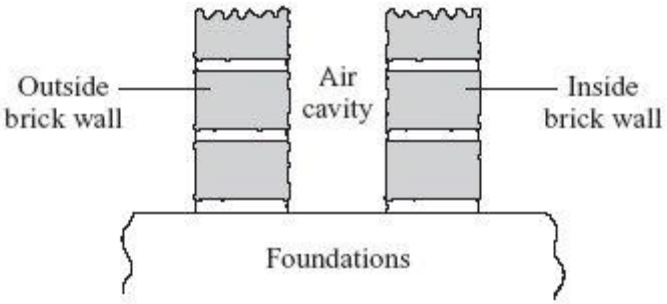
Practice Question Set For GCSE
Subject : Physics
Paper-1 Topic: Particle Model Of Matter (Standard demand)

Name of the Student:_____
Max. Marks : 20 Marks **Time : 20 Minutes**

Q1.

(a) The diagram shows a section through the walls of a house built in 1930.



Explain how the air cavity between the two walls reduces the heat transfer from the house.

_____

_____

_____

_____

(2)

(b) The table shows the installation costs and yearly savings on energy bills for different methods of insulating a house.

Method of insulation	Installation costin £	Yearly saving on energy bills in £
Double glazing	4000	65
Loft insulation	240	60
Cavity wall insulation	600	80

(i) Give **one** reason why loft insulation is often fitted to an old house before double glazing or cavity wall insulation.

_____

_____

(1)

(ii) The time it takes for the saving on energy bills to equal the cost of installing the insulation is called the pay-back time.

Calculate the pay-back time for loft insulation.

_____

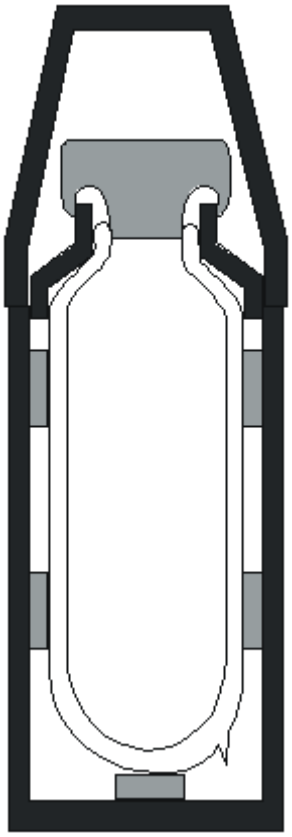
Pay-back time = _____ years

(1)

(Total 4 marks)

Q2.

The diagram below shows a vacuum flask.



(a) Give **two** features of the flask which reduce heat loss by conduction.

1. _____

2. _____

(2)

(b) Give **one** feature of the flask which reduces heat loss by radiation.

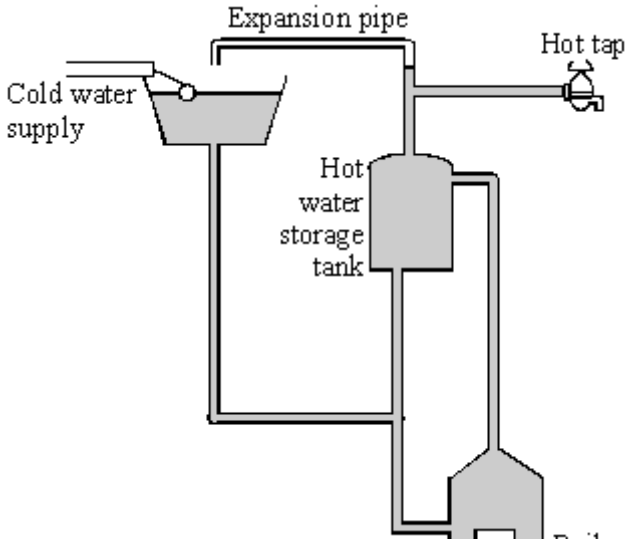
_____

(1)

(Total 3 marks)

Q3.

(a) The diagram shows a hot water system.



(i) Explain why the boiler is below the hot water tank.

_____

_____

_____

(ii) Why is heat energy transferred from hot water in the tank to the surrounding air?

_____

_____

(iii) Name the process by which energy is transferred through the sides of the tank.

_____

(iv) How may heat loss from the hot water tank be reduced?

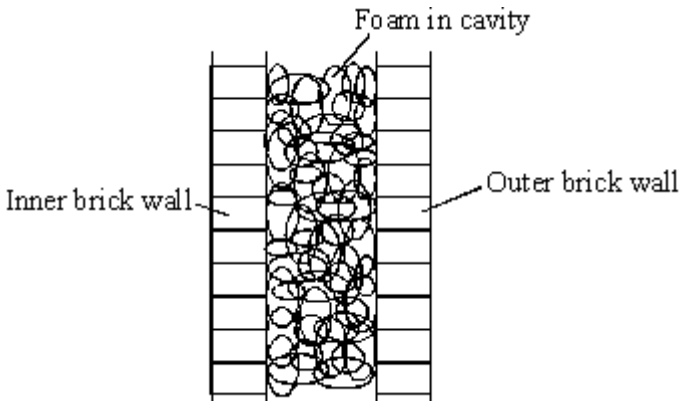
_____

_____

_____

(6)

(b) One way of reducing heat loss from a house is by cavity wall insulation. Foam is pumped between the inner and outer brick walls as shown in the diagram.



How is heat loss from a house reduced by:

(i) having a cavity wall?

_____

_____

_____

_____

(ii) filling the cavity with foam?

_____

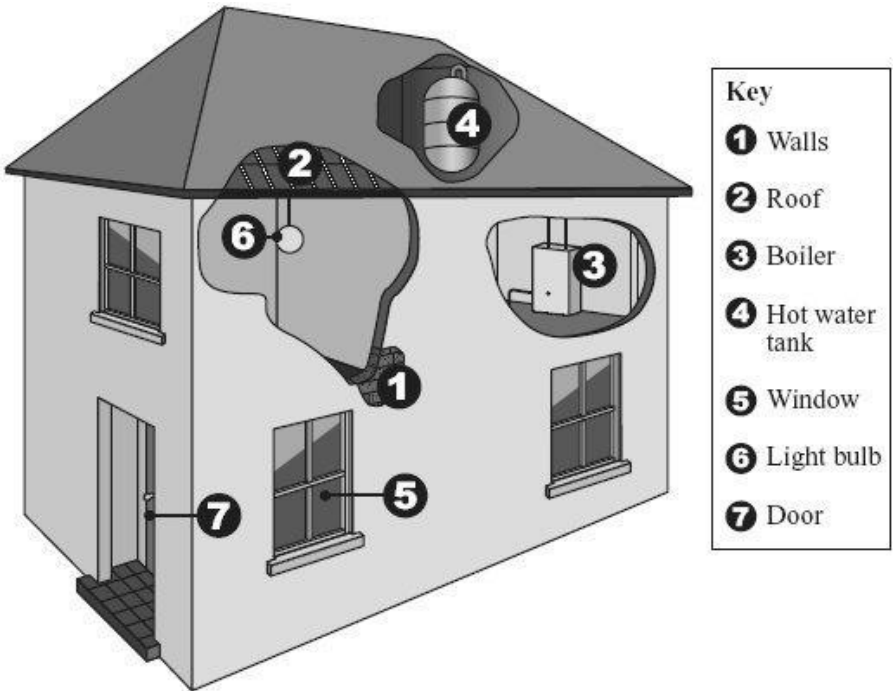
_____

(3)

(Total 9 marks)

Q4.

The drawing shows parts of a house where it is possible to reduce the amount of energy lost.



(a) Give **one** way in which the amount of energy lost can be reduced from each of the following parts of the house.

1, **2** and **4** _____

5 _____

7 _____

(3)

(b) Energy consumption can be reduced by using a more efficient boiler or more efficient light bulbs.

What is meant by a *more efficient* light bulb?

_____

_____

(1)

(Total 4 marks)