

Name of the Student: \_\_\_\_\_

Max. Marks : 17 Marks

Time : 17 Minutes

**Q1.**

- (a) The table gives information about some ways of reducing the energy consumption in a house.

| Method of reducing energy consumption | Installation cost in £ | Annual saving on energy bills in £ |
|---------------------------------------|------------------------|------------------------------------|
| Fit a new hot water boiler            | 1800                   | 200                                |
| Fit a solar water heater              | 2400                   | 100                                |
| Fit under floor heating               | 600                    | 50                                 |
| Fit thermostatic radiator valves      | 75                     | 20                                 |

Which way of reducing energy consumption is most cost effective over a 10-year period?

To obtain full marks you must support your answer with calculations.

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**(3)**

- (b) Explain why using an energy-efficient light bulb instead of an ordinary light bulb reduces the amount of carbon dioxide emitted into the atmosphere.

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**(2)****(Total 5 marks)**

## Q2.

- (a) Explain how energy is produced in the Sun.

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(3)

- (b) Read the following article that appeared in a magazine.

“Conservation of energy is important in today’s society. Energy sources, such as oil and coal, which have been used for the development of an industrial society, cannot be relied upon as heavily in the future. Renewable energy sources cannot provide such large quantities of energy for society without causing problems.”

- (i) Give **two** reasons why oil should not be relied on as a major source of energy for the future.

1. \_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

(2)

- (ii) Energy from the wind is a renewable energy resource. State **three** problems which may arise if the wind were to be used to meet the energy requirements of a large industrial city in Britain.

1. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. \_\_\_\_\_

\_\_\_\_\_

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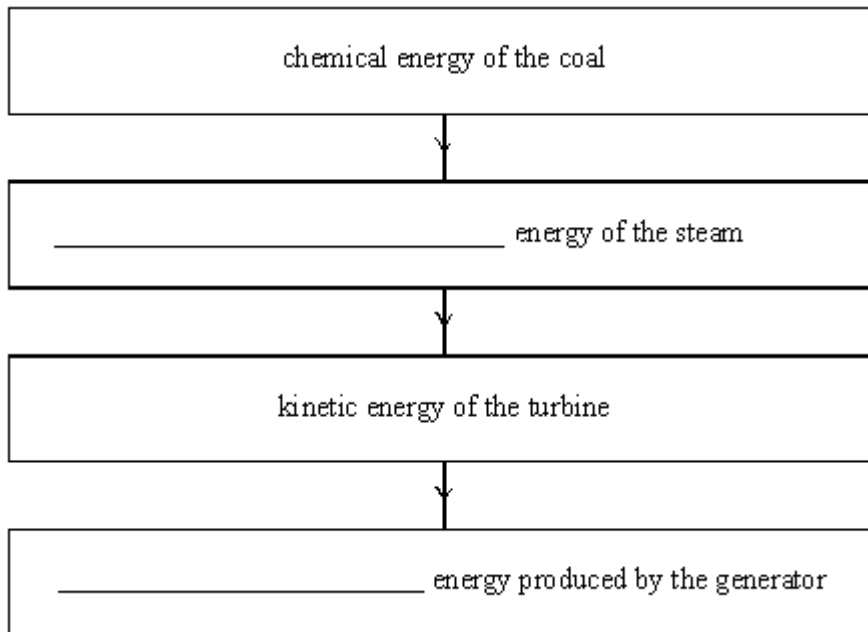
(3)

(Total 8 marks)

## Q3.

- (a) Most electricity in Britain is generated by coal fired power stations.

Complete the sequence of useful energy transfers which take place in the power station.



(1)

- (b) The diagram shows a wind turbine which is used to produce electricity using energy from the wind.



- (i) What is the source of energy which creates winds?

\_\_\_\_\_

(1)

- (ii) Explain the advantage of using a wind turbine to produce electricity.

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\_\_\_\_\_  
\_\_\_\_\_

(2)

(Total 4 marks)