**1.** 0625/33/O/N/19/No.4

**(a)** A man is working on a platform. He uses a rope to raise a bag from the ground to the platform as shown in Fig. 4.1.

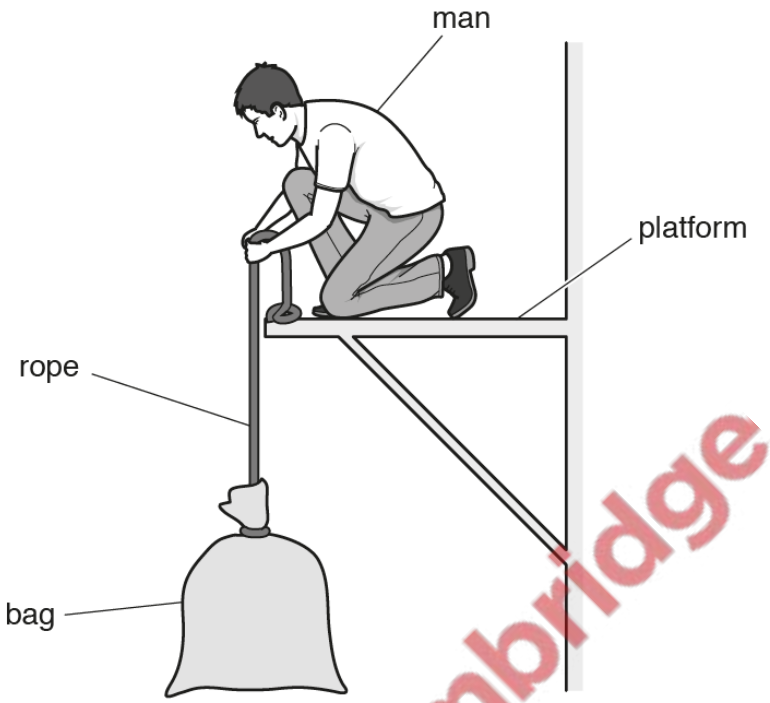



**Fig. 4.1**

**(i)** State the type of energy gained by the bag as it is lifted at constant speed.

..... [1]

**(ii)** The man then lifts a second bag from the ground to the platform. The first bag weighs 100 N and the second bag weighs 150 N.

On which bag of materials does the man do more work?

.....

Explain your answer.

.....

.....

[1]

**(iii)** The man wants to determine his useful power as he lifts one of the bags. He knows the weight of the bag. State the **two** other quantities he needs to know.

1 .....

2 .....

[2]

**(b)** The statements describe processes in a coal-fired power station. They are **not** in the correct order.

A Thermal energy boils water.

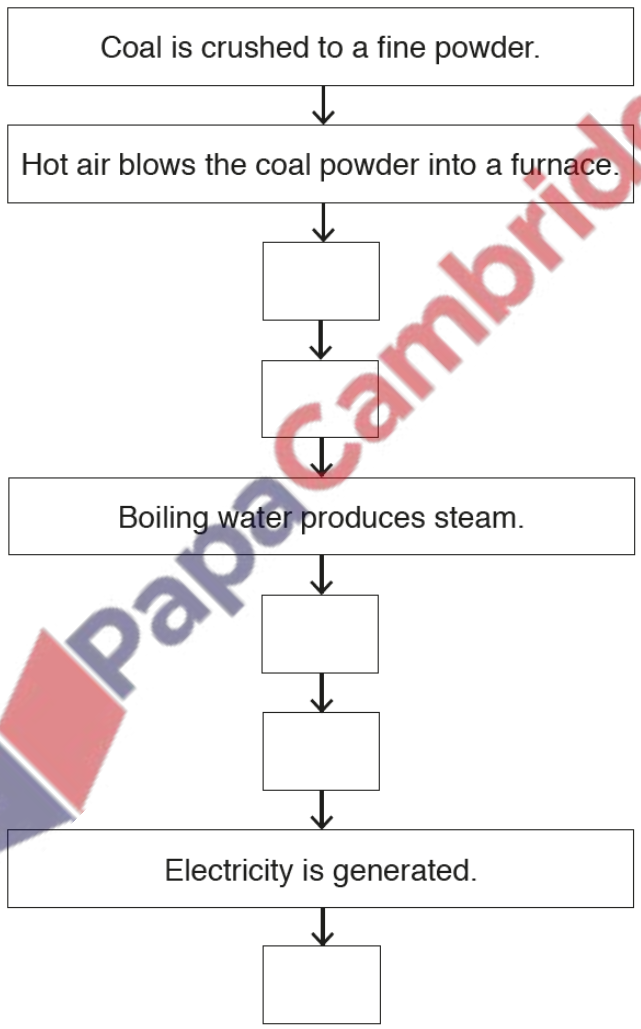
B Coal burns to produce thermal (heat) energy.

C Electricity is transmitted to a step-up transformer.

D A turbine turns coils in a magnetic field.

E Steam turns a turbine.

Use the letters A, B, C, D and E to complete the flow chart explaining how the power station works.




[3]

[Total: 7]

**2.** **(a)** Fig. 3.1 shows a waterfall.

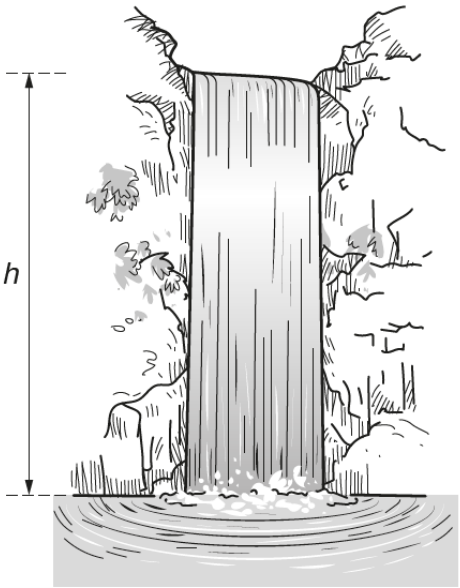



**Fig. 3.1**

**(i)** Describe the main energy transfer which is taking place as the water falls.

..... [2]

**(ii)** The speed of the water as it hits the bottom is 21 m/s.

Calculate the height *h* of the waterfall.

height = ..... [3]

**(iii)** State and explain any assumption you made in **(ii)**.

..... [1]

**(b)** The Sun is the source of energy for most energy resources used to produce electricity.

State **two** energy resources that have another source for their energy.

1. .....

2. .....

[2]

[Total: 8]