Energy Resources – 2022 November IGCSE 0625

1. Nov/2022/Paper_11/No.9

What is a disadvantage of nuclear fission as a source of energy?

A Nuclear power stations are expensive to build.

B Nuclear power stations are unreliable.

C Nuclear power stations can only provide small quantities of energy.

D Nuclear power stations release large quantities of carbon dioxide into the atmosphere.

2. Nov/2022/Paper_12/No.9

Which source of energy is **not** currently used to generate electrical energy?

A nuclear fusion

B solar

C tidal

D waves

(a) Tidal power derives most of its energy from the Moon and part of its energy from the Sun.

(i) State **one** other source of power which derives its energy from the Sun.

..... [1]

(ii) State **one** source of power which does **not** derive its energy from the Sun.

..... [1]

(b) Fig. 3.1 shows a small water turbine driven by a tidal flow of water to generate electrical power.

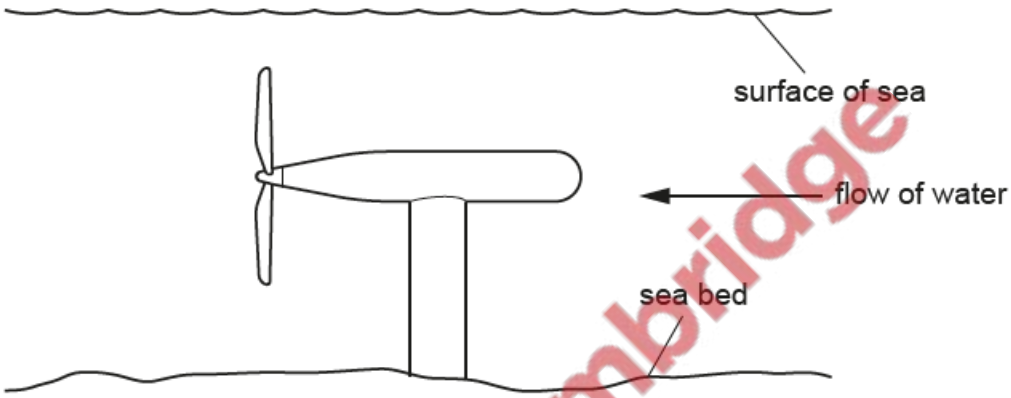

Fig. 3.1

(i) Explain whether this method of generation of electrical power is renewable.

.....

.....

..... [2]

(ii) The mass of water passing through the turbine each second is 6.0×10^3 kg. The speed of the water is 2.0 m/s. 40% of the kinetic energy of the water is converted to electrical energy.

Calculate the electrical power generated.

power = ... [4]

[Total: 8]

4. Nov/2022/Paper_43/No.3

Fig. 3.1 shows the cross-section of a barrage built across a tidal bay. The barrage is part of a tidal power station.

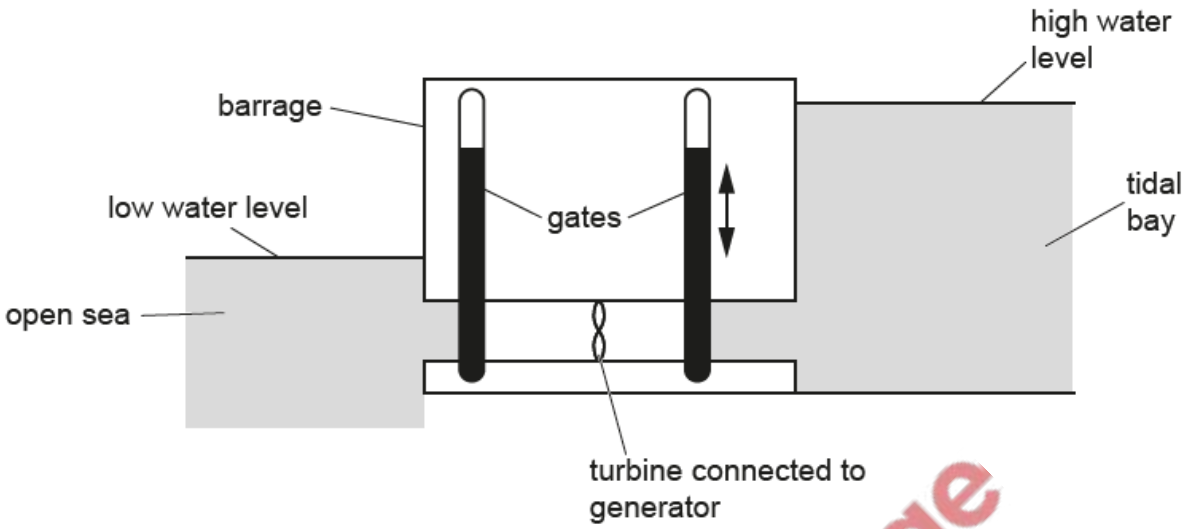

Fig. 3.1

The gates are raised to be open when the tide comes in. The gates are lowered to close when it is high tide. Fig. 3.1 shows the water levels in the open sea and the tidal bay when it is low tide. The gates are raised and water flows through the turbine.

(a) Complete the sentences to describe the energy transfers which take place when the gates are opened.

Use words from the list.

tidal bay	**kinetic**	**gates**	**gravitational potential**
open sea	**turbines**	**water**	

..... energy of the ..... in the ..... is transferred to ..... energy in the rotating ..... . This energy is used in the generator to produce electrical power. [3]

(b) State **one** advantage and **one** disadvantage of tidal power as an energy resource.

advantage .....

disadvantage .....

[2]

(c) State the **main** source of energy for tidal energy.

..... [1]

[Total: 6]