2 The photograph shows the Three Gorges Dam in China, one of the largest hydroelectric power stations on Earth.

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(a) State two advantages of generating electricity using hydroelectric power stations.

(2)

1 .....

.....

2 .....

.....

(b) Water is held in a reservoir on one side of the dam.

The water flows through turbines to a river on the other side of the dam.

The water level of the river is lower than the water level of the reservoir.

(i) State which energy store of the water decreases as the water flows from the reservoir to the river.

(1)

.....

(ii) How is energy transferred from the dam to homes and factories in China?

(1)

☒ **A** by heating

☒ **B** by radiation

☒ **C** electrically

☒ **D** mechanically

(c) The Three Gorges Dam has a larger maximum output power than any other hydroelectric power station on Earth.

(i) State what is meant by the term **power**.

(1)

.....

.....

(ii) The mean energy transferred by the dam each day is 9.7×10^{14} J.

Calculate the mean output power of the dam.

(3)

mean output power = ... W

(iii) The maximum output power is 22 500 MW.

Which of these is the same as 22 500 MW?

(1)

☒ **A** 22 500 000 J

☒ **B** 22 500 000 J/s

☒ **C** 22 500 000 000 J

☒ **D** 22 500 000 000 J/s

(iv) Suggest why the Three Gorges Dam does not always operate at its maximum output power.

(1)

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(Total for Question 2 = 10 marks)