17 A fisherman lifts a fish of mass 250 g from rest through a vertical height of 1.8 m. The fish gains a speed of 1.1 $m\,s^{-1}$.

What is the energy gained by the fish?

A 0.15 J **B** 4.3 J **C** 4.4 J **D** 4.6 J

18 Water from a reservoir is fed to the turbine of a hydroelectric system at a rate of 500 $kg\,s^{-1}$. The reservoir is 300 m above the level of the turbine.

The electrical output from the generator driven by the turbine is 200 A at a potential difference of 6000 V.

What is the efficiency of the system?

A 8.0% **B** 8.2% **C** 80% **D** 82%

19 Which row correctly describes the ordering and motion of the molecules in liquid water and in ice when both are at a temperature of 0 °C?

	ordering	motion
A	a regular pattern of molecules in ice but not in water	molecules in both ice and water have the same average speed
B	a regular pattern of molecules in ice but not in water	molecules in ice travel more slowly than those in water
C	a regular pattern of molecules in both ice and water	molecules in ice travel more slowly than those in water
D	a regular pattern of molecules in both ice and water	molecules in both ice and water have the same average speed

20 The maximum pressure that granite rock can withstand is $2.0 \times 10^8\,N\,m^{-2}$. Above this pressure, the rock begins to flow like a liquid. The density of granite is $2.7 \times 10^3\,kg\,m^{-3}$.

What would be the height of a pure granite mountain whose base is just beginning to flow?

A 3.8×10^3 m **B** 7.6×10^3 m **C** 3.7×10^4 m **D** 7.4×10^4 m