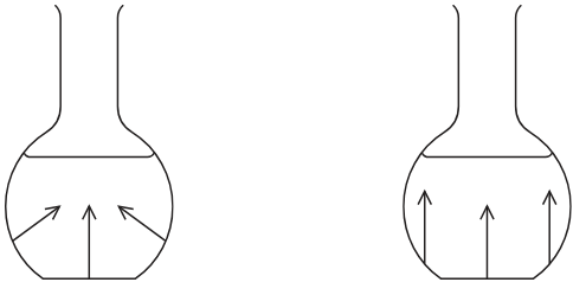
2 (a) Water in a glass bottle exerts a pressure on the glass.

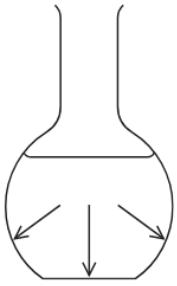
Which of these shows the correct directions of the pressure exerted by the water on the glass?

(1)

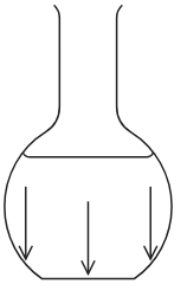


☒ **A**

☒ **B**



☒ **C**



☒ **D**

(b) A box weighs 300 N.

The box rests on the floor.

The area of the box in contact with the floor is 0.75 m^2.

(i) Calculate the pressure exerted by the box on the floor.

Use the equation

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

(2)

pressure = ... Pa

(ii) Which of these is a unit of pressure?

(1)

- ☒ **A** kg/m^2
- ☒ **B** kg m^2
- ☒ **C** N/m^2
- ☒ **D** N m^2

(c) A swimming pool contains fresh water.

The pressure 2 m below the surface of the swimming pool is measured.

The pressure 10 m below the surface of the sea is also measured.

The pressure 10 m below the surface of the sea is greater than the pressure 2 m below the surface of the swimming pool.

State **two** reasons why the pressure is greater 10 m below the surface of the sea.

(2)

1 .....

.....

2 .....

.....

(Total for Question 2 = 6 marks)

Question number	Answer	Mark
2 (a)	**C**	(1)

Question number	Answer	Additional guidance	Mark
2 (b)(i)	substitution (1) $\frac{300}{0.75}$ evaluation (1) 400 (Pa)	Award full marks for correct answer without working	(2)

Question number	Answer	Mark
2 (b)(ii)	**D** N/m^2	(1)

Question number	Answer	Additional guidance	Mark
2 (c)	An answer that contains the following points of understanding: • increase in depth (1) • increase in density (1)	sea water contains salt	(2)