

**Marks**  
**4**

- Oral rehydration therapy (ORT) is a simple low-cost treatment that replaces fluid and electrolytes lost by sufferers of diarrhoea. To make the solution for ORT, 3.5 g NaCl, 2.9 g sodium citrate (which contains 1 citrate<sup>3-</sup> and 3 Na<sup>+</sup> ions and has a molar mass of 258 g mol<sup>-1</sup>), 1.5 g KCl and 20.0 g glucose (C<sub>6</sub>H<sub>12</sub>O<sub>6</sub>) are dissolved in water to make 1.0 L of solution. What is the osmotic pressure (in mmHg) of this solution at body temperature (37 °C)?

Answer:

This pressure is about the same as the osmotic pressure of blood. The calorie content of the solution can be increased by adding either more glucose or a polymer of glucose. Which would be preferable? Give a brief reason.