*Do not write outside the box*

**1** The table below shows some information about sports drinks.

| Drink | Glucose (g per $dm^3$) | Ions (mg per $dm^3$) | Protein (g per $dm^3$) |
|---|---|---|---|
| **IsoBurst** | 100 | 22 | 0.0 |
| **Energo** | 79 | 80 | 0.9 |
| **Powertank** | 91 | 72 | 0.0 |
| **Thunderzap** | 140 | 19 | 0.0 |

Levels of glucose and ions in the body can reduce rapidly during exercise.

**1 (a)** Explain why the levels of glucose and ions in the body reduce during exercise.

Glucose

(glucose) used for energy [1 mark]

for movement [1 mark]

through respiration [1 mark]

*(2 marks)*

Ions

(ions) lost in sweat [1 mark]

Through the skin [1 mark]

*(2 marks)*

**1 (b)** Scientists have shown that the ratio of the glucose concentration, in g per $dm^3$, to the ion concentration, in mg per $dm^3$, in a drink affects the rate of uptake of water by the body.

The nearer this ratio is to 1:1, the faster the uptake of water from the drink.

Which drink would be allow the fastest uptake of water.

Energo [1 mark]

A lot to do for 1 mark here because you need to work out the ratio so a question like this might be worth more marks. The ratio was 79:80 which is closest to 1:1 if you cancel down.

*(1 mark)*

*Do not write outside the box*

**1 (c)** The manufacture of Thunderzap makes the following claim:

*'Thunderzap - the only drink to give your body what it needs when you exercise'*

Evaluate this claim.

Command word 'evaluate' means you'll have to look at both sides here, even though it's quite obvious that there is not just one drink for an exercising body.
You'll have to keep this balanced and you'll get a maximum of two marks for each side of for and against.

**For/support of the claim**

Provides glucose or energy [1 mark]

for movement/exercise [1 mark]

contain ions [1 mark]

to replace those lost in sweat [1 mark]

**Against the claim**

other drinks or one of the other named drinks also provide glucose and ions [1 mark]

can also drink water [1 mark]

Energo is better for uptake of water [1 mark]

No evidence for claim [1 mark]

*(4 marks)*

**(Total 9 marks)**