

Volume 17, Number 1, September 2021

## Answers

# Exam-style questions

*Sarah Powell and Adam Morton*

Check your answers to the question in this issue.

## Hydration: is water enough? (pp. 18–21)

1 One mark for any of the following:

Hydration during recovery can be achieved using energy drinks/gels/isotonic/hypertonic drinks.

Energy drinks can maximise glycogen/glucose replenishment.

Replace electrolytes during a game.

Hypertonic drinks should only be used after the match has finished as they contain a higher concentration of glucose.

2 One mark for any of the following:

Decrease in plasma volume.

Reduced blood pressure/blood flow to working muscle/blood flow to the skin.

Reduced sweating to prevent water loss.

Increased core temperature.

Decrease in stroke volume/increased heart rate.

Muscle fatigue

Muscle cramps

Reduction in the exchange of waste products/transportation of nutrients.

Irregular heartbeat.

Decreased performance/decreased reaction time/decreased decision-making.

## Online cycling apps (pp. 29–33)

1 One mark for any of the following:

Overall intensity of performance decreases as duration of performance increases.

Aerobic system: low to moderate intensity 3+ minutes.

Glycolytic system: high intensity for 10s–180s

ATP-PC system: very high intensity for up to 10s.

2 One mark for any of the following:

Slow oxidative fibres.

Fewer fibres per motor neuron.

Lower speed and force of contraction.

Greater mitochondrial density, more capillaries and myoglobin.

Greater aerobic capacity and resistance to fatigue.

Suitable for endurance events, such as the Tour de France.

Fast glycolytic fibres.

Large motor units.

Very high speeds and force of contraction.

High levels of phosphocreatine stores.

Greater anaerobic capacity but limited resistance to fatigue.

Suitable for explosive movements, such as short sprints in cycling.

Fast oxidative glycolytic fibres.

Large motor units.

High levels of force and speeds of contraction.

Moderate resistance to fatigue, moderate aerobic and anaerobic capacity.

Suited to longer high-intensity efforts, such as those seen in track cycling.

**3** One mark for any of the following:

Reduce frontal cross-sectional area.

Tucked position, such as drafting.

Speed: increased speed leads to increased air resistance.

Need to maximise speed.

Streamlining and shape.

Aerodynamic helmets.

Surface characteristics.

Smooth surface, such as shaved legs, or directing air flow through contoured surfaces.

**This resource is part of PE REVIEW, a magazine written for A-level students by subject experts.**

**To subscribe to the full magazine go to [www.hoddereducation.co.uk/perreview](http://www.hoddereducation.co.uk/perreview)**