

Question	Marking Guidance	Mark	Comments
06.1	1. Increases dissociation of oxygen; 2. For <u>aerobic</u> respiration at the tissues/muscles/cells OR Anaerobic respiration delayed at the tissues/muscles/cells OR Less lactate at the tissues/muscles/cells;	2	1. Accept unloading/ release/reduced affinity for dissociation
06.2	1. (Time) 10 minutes; 2. (Ratio) 1.6875(:1); Allow 1 mark for correct ratio calculated from wrong time	2	For the ratio accept any correct rounding
06.3	1. Increase in breathing (rate); 2. Similar/same pCO ₂ per breath, but more breaths; OR 3. Increase in tidal volume; 4. Similar/same pCO ₂ per breath, but increased volume per breath;	2	Award mark points 1 and 2 OR 3 and 4 1. Allow more breaths per minute 1. Reject more BPM 3. Accept each breath is deeper
06.4	Second box ticked (Muscle fibres have a limited amount of phosphocreatine.)	1	

<p>06.5</p>	<p>1. More acetylcoenzyme A would enter the Krebs cycle;</p> <p>2. (So) the Krebs cycle generates (more) reduced coenzymes</p> <p>OR</p> <p>(So more) reduced coenzymes pass their electrons to the electron transfer chain;</p> <p>3. (So more) ATP would be produced;</p> <p>4. Athletes could build (slow) muscle (fibres) without exercising;</p> <p>5. (Having more) slow muscle (fibres) would increase endurance;</p>	<p>4 max</p>	<p>1. 2. and 3. idea for more is required once</p> <p>2. Accept examples of reduced coenzymes</p> <p>2. Reject production of reduced NADP or NADPH_2</p> <p>4. Ignore 'develop (slow) muscle (fibres) at rest' as in stem of question</p> <p>4. Accept description of not exercising, eg without training</p> <p>5. Accept descriptions of endurance in terms of delayed onset of anaerobic respiration</p>
<p>06.6</p>	<p>1. (EPO) causes blood to thicken;</p> <p>2. (The thickened blood) could block the coronary arteries</p> <p>OR</p> <p>(The thickened blood) slows blood flow</p> <p>OR</p> <p>(The thicker blood) could cause clots;</p>	<p>2</p>	<p>1. Accept descriptions of thickening, eg more viscous</p> <p>2. Reject atheroma/plaque (forms)</p> <p>2. Accept could cause thrombus/embolus</p>

<p>06.7</p>	<p>1. Some cyclists will gain a bigger advantage/increase</p> <p>OR</p> <p>Cyclists with a haematocrit of 50% would not be able to gain an advantage;</p> <p>2. There are health risks (associated with) taking EPO;</p>	<p>2</p>	<p>1. Accept use of the data, or suitable calculations, eg some may have an 8% increase, others 0%</p> <p>1. Some cyclists might naturally have a haematocrit over 50% (and so not be allowed to compete)</p> <p>2. Accept dangerous side-effects of taking EPO, or examples of health risks</p>
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