

Answers: 5 Mark Questions – Paper 1

Question 1

(2 x AO1, 3 x AO2)

2 marks sub-max (effects AO1):

1. Improvements to the efficiency of the respiratory system
2. Increased efficiency to take in O₂ or to supply O₂ to muscles
3. Increased surface area of alveoli
4. Increased capillarisation / capillary density around alveoli
5. Strengthens respiratory muscles / respiratory muscle hypertrophy
6. Increase in (maximum) pulmonary ventilation
7. Increase in minute volume
8. Increase in tidal volume
9. Decrease in lung disease / healthier lungs

3 marks sub-max (benefits AO2):

1. Increased endurance / able to run for longer
2. Increased performance levels
3. Increased speed of recovery
4. Better chance of participating in running for a longer time / older age (due to health benefits)

Question 2

(5 x AO2 – must give practical examples to achieve the marks)

1. Vascular shunt mechanism
2. More blood delivered to the working muscles / vasodilation of blood vessels
3. E.g. – Increased blood supply to the quadriceps during a game of hockey
4. Decrease in blood flow to other organs / vasoconstriction of blood vessels
5. E.g. – Decreased blood supply to the liver / kidney / intestines during a game of hockey

Question 3

(5 x AO2 – only give marks if links to football)

1. increase in size / mass / hypertrophy / growth (of muscle)
 - a. e.g. – Easier for player to shield the ball away from opponent
2. increase in strength / stronger / power / tone / force
 - a. e.g. – Able to kick the ball harder / further
3. increase in speed (of contraction)
 - a. e.g. – Beating an opponent in a sprint to get the ball first
4. increase in muscular endurance or able to last longer / decrease in fatigue
 - a. e.g. – Easier to perform for the entire game/90 minutes
5. increase in flexibility / able to stretch further / elasticity
 - a. e.g. – Able to stretch for the ball further when making a tackle / less likely to get injured
6. increase tolerance to lactic acid
 - a. e.g. – Able to keep playing for longer / harder / increased chances of lasting 90 minutes
7. increase in recovery rate
 - a. e.g. – Player ready for next game / training quicker
8. increased rate of removal of lactic acid
 - a. e.g. – Able to keep playing for longer / harder / increased chances of lasting 90 minutes
9. greater potential for energy production
 - a. e.g. – Able to keep playing for longer / harder / increased chances of lasting 90 minutes
10. increase in size / number of mitochondria
 - a. e.g. Able to compete in a game faster / longer
11. increase in capillaries / more oxygen / haemoglobin available
 - a. e.g. the player is able to work harder / longer
12. helps to prevent injury / assists with recovery from injury
 - a. e.g. – Less prone to injury during a game of football

Question 4

(5 x AO2)

1. Increase in heart rate/HR
2. Increase in stroke volume/SV
3. Increase in cardiac output/Q
4. Increases blood flow/oxygen to (working) muscles
5. directs blood away from other organs OR less blood to other organs
6. Increase in blood pressure due to the increase in demand for oxygen (from the working muscles)
7. Increase in blood lactate/lactic acid/CO₂ because muscles are working
8. Blood temperature increases to help control of body temperature
9. Vascular shunt OR vasodilation of blood vessels to muscles OR vasoconstriction of blood vessels to other organs

Do not accept: long-term adaptations e.g. stronger heart

Pt 4 - Blood flows to muscles = TV as need more/increase

More blood to arms/legs = BOD **pt. 4**

Lactic acid builds up in muscles – TV

Lactic acid produced – TV

LA found in the blood – TV

Answers: 5 Mark Questions – Paper 2

Question 5

(3 x AO2, 2 x AO3 – goals must be relevant to tennis scenario)

1. Specific – to improve the serve in tennis (AO2)
2. Measurable – to serve with at least 70% in the serve box (AO3)
3. Achievable – to win 40% of points on second serve (AO3)
4. Recorded – to write down the number of serves that are in (AO2)
5. Timed – to improve over a two week training programme (AO2)