



Model Answers

OCR GCSE PE – Paper 1

(Revision session on Wednesday 4th May 2022, 5.45–7.15pm)

This document contains:

- Model answers for the Practice Questions answered during the 2022 Revision series
- Questions in AEI order
- Where possible, examples of extended writing
- No one-mark or multiple-choice questions

How should schools use these papers?

This paper has been constructed specifically for use in preparation for and during the live revision shows provided by James Simms in May 2022. I encourage students to attempt the questions in advance of the revision shows.

Please, use these model answers in combination with the mark scheme and the revision session, available in the OCR GCSE PE Revision page (<https://pages.theeverlearner.com/2022-ocr-gcse-pe-revision>).

All questions are taken from ExamSimulator. Please note, there are hundreds of additional questions on ExamSimulator covering the AEI topics. ExamSimulator is a premium resource available via TheEverLearner.com.

I hope this helps both students and teachers in their exam preparations.

James Simms

1. Define the term '**mechanical advantage**'.

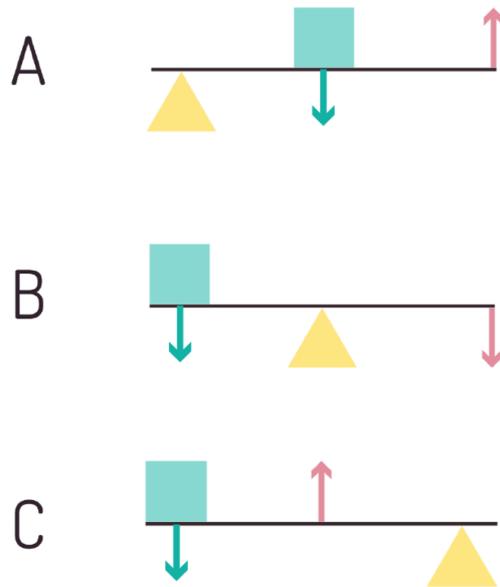
Mechanical advantage is the ability of a lever to ¹overcome a large load with little effort and is achieved when the ²effort arm is longer than the load arm.

No comments provided.

Marks:[1/1]

2.

The diagram shows the three classes of lever. Identify which lever system is shown in A, B and C.



1 A is a 2nd class lever. **2** B is a 1st class lever. **3** C is a third class lever.

No comments provided.

Marks:[3/3]

3. Lever systems play a fundamental role in providing movement. **Describe** the characteristics of lever systems.

<p>1 Levers have an effort which is a muscle contraction. 2 Levers have a load which is normally body weight or a resistance such as a dumbbell. 3 Levers have a fulcrum which is typically a joint. Levers 4 have a lever arm which is normally a long bone.</p>	<p>No comments provided.</p>
	<p>Marks:[3/3]</p>

4. Explain why flexion at the elbow during a bicep curl uses a third class lever.



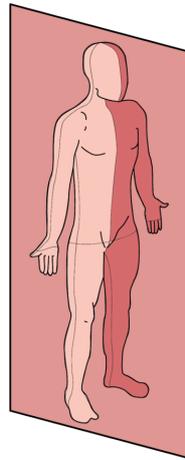
Because the ¹ **effort lies between the load and the fulcrum**. The ⁴ **effort is the biceps** tendon inserting onto the radius and lies ² **between the fulcrum which is the elbow joint** and the ³ **load which is the weight** of the dumbbell.

No comments provided.

Marks:[3/3]

5. Using a sporting example, identify a joint movement that occurs along the plane in the image.

Sagittal Plane



1

Flexion of the knee when **preparing to kick a rugby ball** and make a conversion.

2

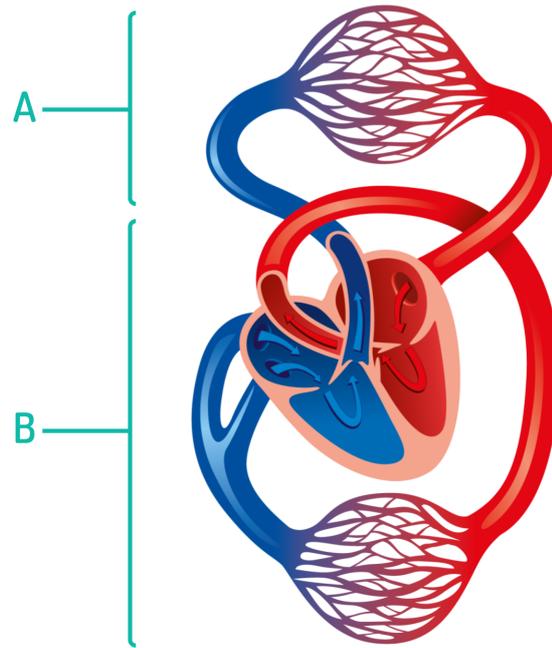
No comments provided.

Marks:[2/2]

6. Using a practical example, describe movement around the **longitudinal axis** of rotation.

<p>The longitudinal axis runs from the ¹top of the body to the bottom.²</p> <p>Movements such as ³pivoting in netball involve rotation around the longitudinal axis which is also movement along the transverse plane.</p>	<p>No comments provided.</p>
	<p>Marks:[3/3]</p>

7. The picture shows the double circulatory system. Identify the loops labelled A and B.



*For representation purposes only. Not anatomically accurate.

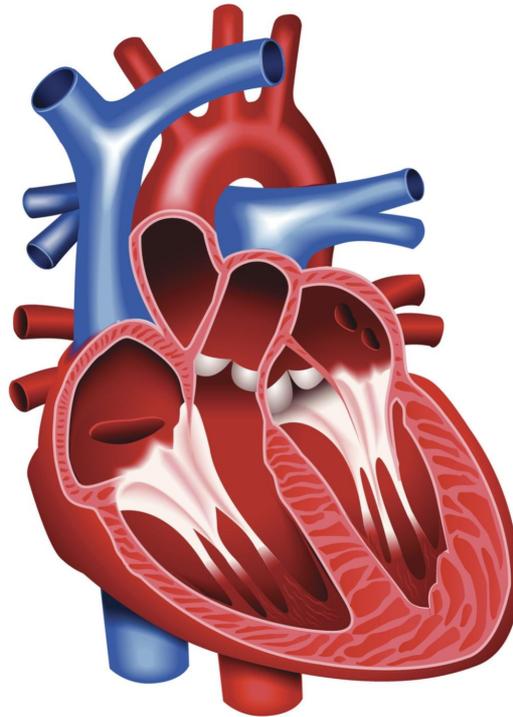
1 A is the pulmonary circuit. 2 B is the systemic circuit.

No comments provided.

Marks:[2/2]

8.

The heart contains four valves.
Analyse the roles of the different valves in the heart.

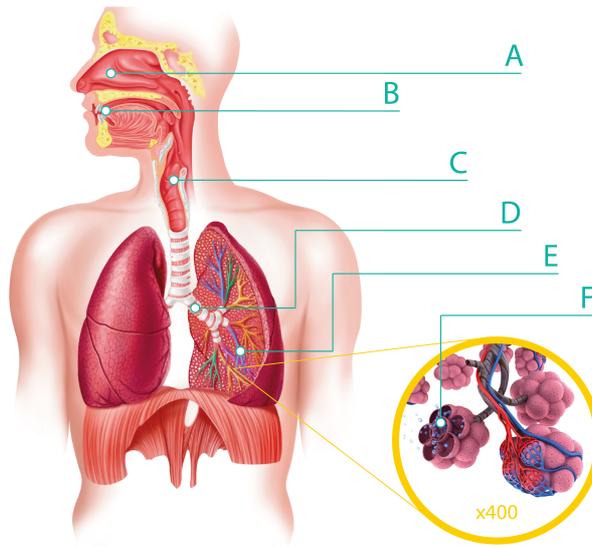


Valves throughout the body ¹ prevent the backflow of blood. The ⁴ tricuspid valve lies between the right atrium and ventricle and ⁵ prevents blood flowing back into the right atrium. The ² bicuspid valve lies between the left atrium and ventricle and ³ prevents ⁶ blood flowing backward into the left atrium. The ⁷ semilunar valves are at the exits of each ventricle and prevent blood flowing backward into the ventricles.

No comments provided.

Marks:[4/4]

9. Identify the components of the respiratory system labelled **C** and **E**.



1 C is the trachea. 2 E is a bronchiole.

No comments provided.

Marks:[2/2]

10. Describe the role of the diaphragm during inspiration.

<p>1 The diaphragm contracts and flattens which causes the ribs to be pushed up and outward.</p> <p>2</p>	<p>No comments provided.</p>
	<p>Marks:[2/2]</p>

11. Describe **three** features of the alveoli that make them suitable for gaseous exchange.

<p>An alveolus is ²one single epithelial cell thick which causes a ¹short diffusion pathway. It is ³surrounded by a bed of capillaries with constantly moving blood. this provides a ⁵huge surface area for diffusion. An alveolus contains a higher concentration of oxygen than in the blood which leads to a diffusion gradient.</p>	<p>No comments provided.</p>
	<p>Marks:[3/3]</p>

12.

The image shows athletes running a marathon.

Explain how an increased quantity of oxygen is supplied to the muscles **during** long distance running events.



1 Blood vessels leading to the working muscles vasodilate,
2 whereas vessels leading to the other organs vasoconstrict.
7
8 Meanwhile, heart rate and stroke volume increase leading to a
greater overall exercising cardiac output.

No comments
provided.

Marks:[4/4]

13.

Weight training for a rugby player will help to cause long-term adaptations in the musculoskeletal system. State **two** musculoskeletal adaptations that a rugby player would experience after regular training.

<p>1 Increased bone density and 3 muscle hypertrophy. 2 Tendons and ligaments also strengthen.</p>	<p>No comments provided.</p>
	<p>Marks:[2/2]</p>

14. Justify the importance of both **cardiovascular endurance** and **speed** for a 10km runner.

CV endurance allows the runner to move at a ¹ **constant pace** ² **without reaching fatigue**. Therefore, the **lap split times can be** ³ **even - paced** without needing to slow down. **Speed is crucial** ⁴ **during the final lap sprint**. This allows the runner to **overtake** ⁴ **racers** ahead of them or **hold off challengers to their lead**.

④ **Excellent additional example for point 4.**

Marks:[4/4]

15. Justify the importance of both **agility** and **balance** for a slalom skier.



1 Skiers need agility to turn gates, especially in slalom races. The faster they turn, the 2 less they need to slow down and the quicker they reach the line. 3 Skiers need balance when they lean to the side and their line of gravity is not above their base. Good 4 balance decreases the chances of a fall and allows for a faster time to be recorded.

No comments provided.

Marks:[4/4]

16. Explain why an endurance athlete might use **HIIT** as part of their training regime.

Endurance athletes use HIIT because they have to ² recover ³ aerobically between sets. This puts pressure on their aerobic system which then adapts. The work periods are ⁴ at the anaerobic threshold meaning an endurance athlete adapts to tolerate more lactic acid. ⁵ HIIT is very variable and ⁶ can be easily adapted to the specific needs of the athlete. Finally, ⁹ HIIT takes less time than ⁹ continuous training but ⁹ burns even more calories.

No comments provided.

Marks:[3/3]

17.

A volleyball player uses plyometric training to maximise fitness for competition. Evaluate the use of plyometrics for a volleyball player. Describe the factors which affect **female** participation levels in volleyball.



Plyometric training is ideal for improving power. It involves **bounding, hopping and medicine ball work** to improve power. Power is essential in volleyball in order to **jump high and spike** or block the ball above the net. The higher the player can jump, the better the angle for smashes downwards. Therefore the player should aim to improve **power of the quadriceps** and **gastrocnemius** in order to **jump higher**. Better power could also be applied by the player **when they squat to dig** when they are defending. Plyometrics is very variable and **volleyball shots could be incorporated into the training**. Furthermore, the training can be **done on the volleyball court**. One negative of plyometrics is that it is very **high impact and can cause injuries**. Therefore, it should be done once the preseason training has been completed only. Participation is affected by **role models**. In volleyball, especially **in the UK, there are very few female role models** and, therefore, girls do not have a model to follow. Furthermore, **volleyball receives very little media coverage outside** of the

No comments provided.

17.

A volleyball player uses plyometric training to maximise fitness for competition. Evaluate the use of plyometrics for a volleyball player. Describe the factors which affect **female** participation levels in volleyball.

Olympic games and, therefore, ¹⁷ girls might be more likely to be attracted to other sports such as tennis or football. Another ²⁰ factor is ²¹ education and whether a school offers volleyball will definitely influence participation. A school with good volleyball provision is far more likely to encourage participation amongst girls and boys. Following on from this, girls need ²⁴ opportunities in ²⁵ the local community outside of a schools. ²⁹ If there are volleyball clubs, girls are likely to attend. Finally, it matters whether girls are ³² supported by their family if, for example, parents drive their daughter to practice, attend her matches and generally encourage her, she is far more likely to continue playing than if not.

Marks:[6/6]

18.

State two methods a hockey coach could use to prevent injury to their players. Give a practical example of each method.



Insisting on **PPE**. For example, ensuring all players wear **shin pads and gum shields**. Providing the **right level of competition** by establishing **age ranges or separation between youth and senior teams**.

No comments provided.

Marks:[4/4]

Feedback:

No feedback provided.