The EverLearner

# Practice Questions

# OCR A-Level PE - Biomechanics

## (Revision session on Tuesday 10th May 2022, 4.00-5.30pm)

**Please read before distributing to students.**

### Purpose of this document

The questions contained within this document are those being answered live by James Simms during the May 2022 revision series on YouTube. The questions do not form a mock exam or practice paper as a whole. Rather, they are a series of questions that cover a range of content and skills required by the Advance Exam Information (AEI) published by the exam board in February 2022. There has been no attempt to organise the questions so that a mock or practice paper is formed. Instead, the questions are presented in the order of the AEI.

### This paper contains:

- 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. Students will receive the mark schemes and model answers as part of the revision experience.

Mark schemes and model answers will be published as part of the live revision show.

We have provided students with plenty of writing space in each question, so that they can draft their answers, attempt questions multiple times or write additional information.

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 Newton's first law of motion **and** apply it to a sporting example of your choice.

**(3 marks)**

2. Explain how **two** different factors affect the stability of a handstand in gymnastics.

**(4 marks)**

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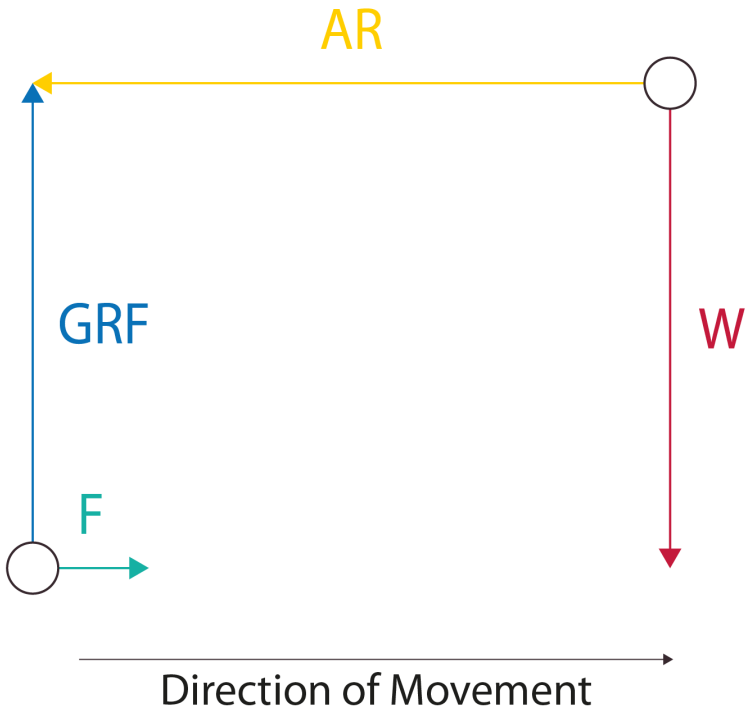
3. This image shows all the forces acting on a runner but the image of the runner has been removed.
Using your knowledge of net force, identify the nature of the vertical and horizontal forces acting **and** name the state of motion this runner is in.

**(3 marks)**



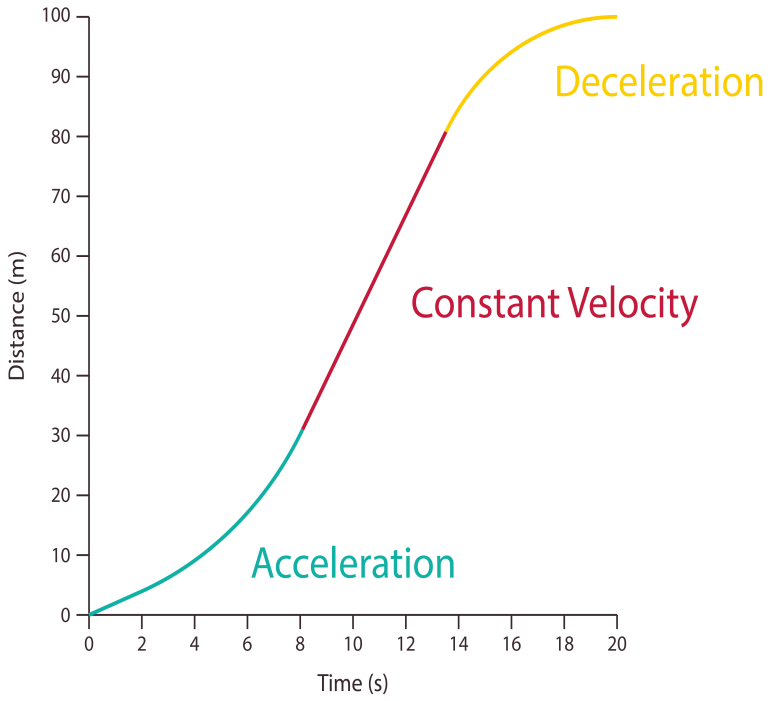
4. All sporting objects will be affected by either balanced or unbalanced forces. Explain balanced and unbalanced forces, giving a sporting example for each.

**(4 marks)**

5. A 100m coach has been employed.
Use this graph to suggest **two** weaknesses in the athlete's performance.

**(2 marks)**

Distance-time Graph for an Amateur Sprinter

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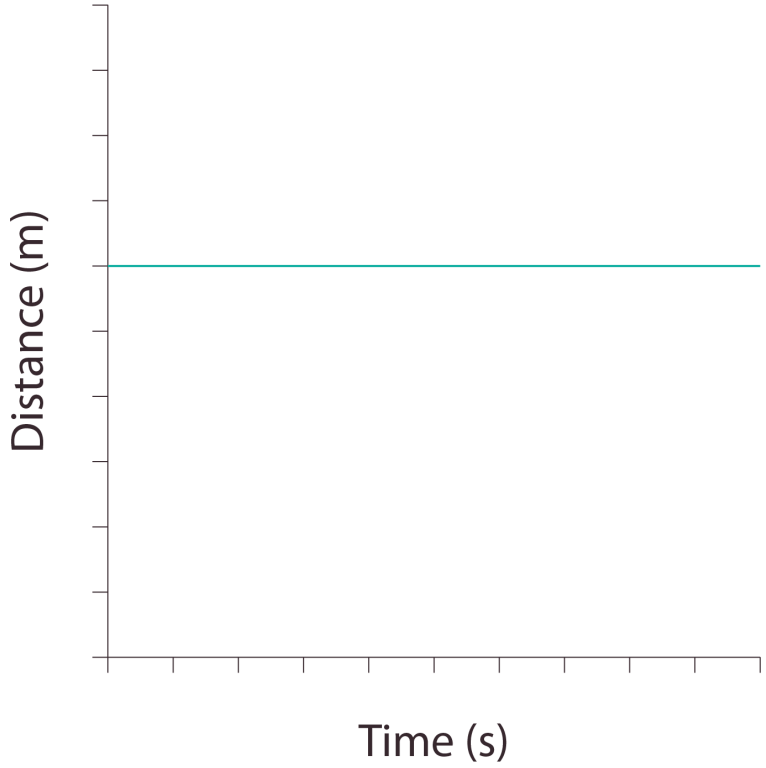
6. Analyse what is occuring in the graph and suggest a suitable sporting example where this would occur.

**(2 marks)**

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7. The three principal axes of rotation are longtitudinal, frontal and transverse.
Suggest a suitable sporting movement for each of these three axes.

**(3 marks)**

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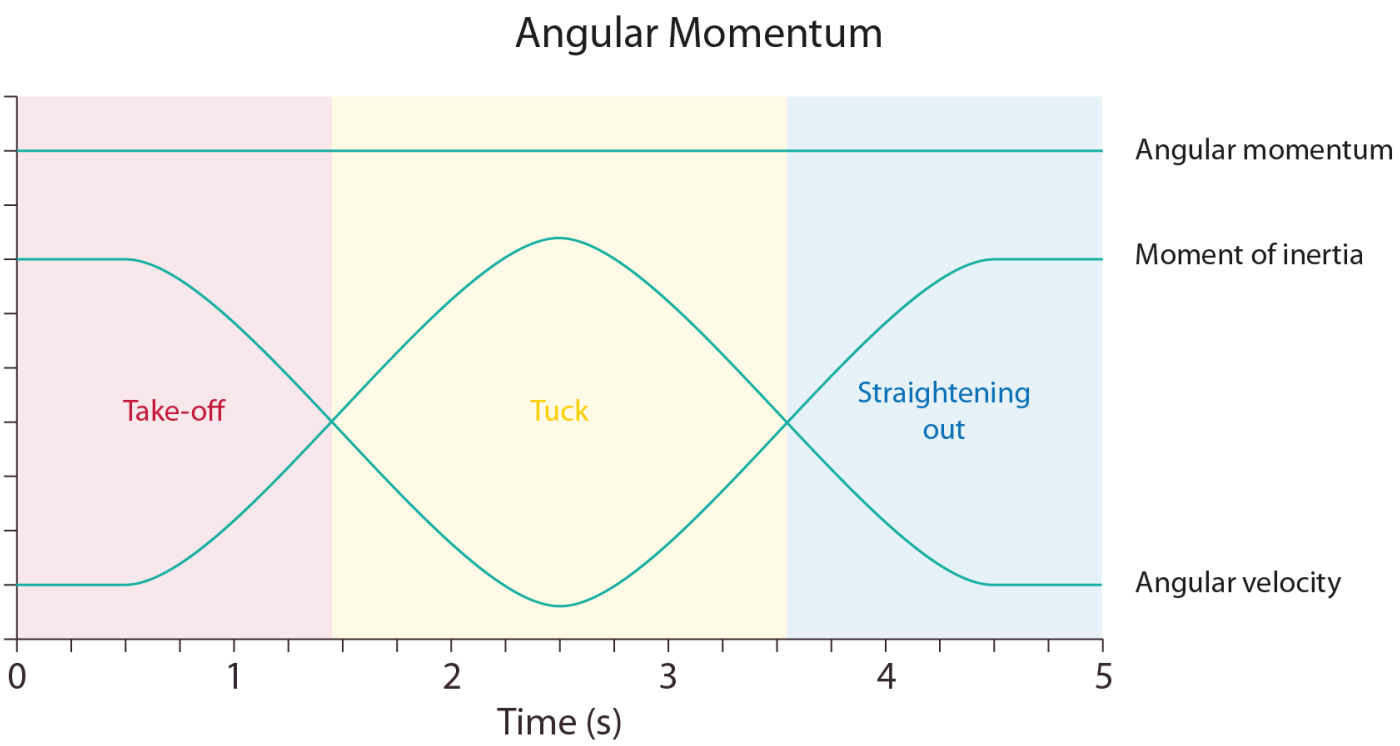
8. Define the term **angular velocity**, state the correct equation and give the suitable unit it is measured in.

**(3 marks)**

9. The graph shows the relationship between moment of inertia, angular velocity and angular momentum for a diver performing a tuck forward somersault.
Analyse the graph, explaining the relationship between these three measurements throughout the entire movement.

**(6 marks)**

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