



Mark Scheme

Edexcel GCSE PE – Paper 1

Please read before distributing to students.

Purpose of this document

This document and the associated question paper are based on the data analysis performed by The EverLearner Ltd and published within the 2023 infographics. We are confident that:

- We believe this mark scheme has a very strong association with the actual external exam in 2023 in relation to command terms, skills, AO distribution, extended writing requirements and topics.
- However, this is categorically NOT a mark scheme for a predicted paper. No-one can accurately predict an exam paper and we make no claim to this end.
- It is vital that you only use this document internally in your school/college. Publishing the document online or sharing it in any other way is strictly prohibited as this will undermine the potentially educational experiences of students in other schools/colleges.
- Finally, please check the publication dates of the model answers for this paper as well as the associated revision sessions in May.

This mark scheme contains:

- Copy of each question for reference
- Marking guidance where appropriate
- Marking points containing alternative acceptable responses plus relevant assessment objective

How should schools use this mark scheme?

The mark scheme has been constructed specifically for the exam paper used in The EverLearner's National Mock Exams from 2023. The model answers will be available on the 28th April and some of these questions will be discussed in the live revision show provided by James Simms (Wednesday 3rd May, 17:00-18:30 on [youtube.com/TheEverLearner](https://www.youtube.com/TheEverLearner)).

All questions/mark schemes are available on ExamSimulator. Please note, there are hundreds of additional questions and mark schemes on ExamSimulator covering the Edexcel GCSE PE topics and skills. Within the platform, the teacher is assisted with the marking and full diagnostic feedback is also provided. ExamSimulator is a premium resource available via TheEverLearner.com.

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

James Simms



Subject	
Course	Edexcel GCSE PE 9-1
Time allowed	1 hour 30 minutes

Title	Edexcel GCSE PE 9-1 Paper 1 National Mock Exam 2023
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Guidance	<ul style="list-style-type: none">• This paper is marked out of 80 marks.• You have 90 minutes (plus additional time for those who have Exam Access Arrangements).• Answer all questions.• A calculator is permitted for this exam.• This paper contains a 9-mark question.• Good luck.
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Total marks	80
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1. Which of the following sport performers relies the most on aerobic respiration?

Marking guidance

Only accept option D. Do not accept options A, B or C. Only option D is correct.

Marking points **(maximum 1)**

(1) [AO 2] Option D/D/Middle-distance runner

2. Which of the following is a function of platelets?

Marking guidance

Only accept option D. Do not accept options A, B or C. Only option D is correct.

Marking points **(maximum 1)**

(1) [AO 1] Option D/D/Clot the blood when exposed to the air

3. Which letter represents the cervical vertebrae in this image?

Marking guidance

Only accept option A. Do not accept options B, C or D. Only option A is correct.

Marking points **(maximum 1)**

(1) [AO 1] Option A/A

4. Identify the lever system operating when the elbow extends when throwing a ball.
-

Marking guidance

Only accept option A. Do not accept options B, C or D. Only option A is correct.

Marking points (maximum 1)

(1) [AO 2] Option A/A/First class lever

5. Explain how arteries are able to supply greater volumes of blood to the muscles during exercise.
-

Marking points (maximum 4)

(1) [AO 1] Arteries have elastic walls

(2) [AO 2] So can resist higher pressure blood

(3) [AO 1] Arteries have a thick layer of smooth muscle

(4) [AO 2] So can vasoconstrict and vasodilate to redistribute blood to the muscles

6. The image shows a vertical jump.
Analyse the movement at the knee joint when moving from position A to B.
-

Marking points (maximum 3)

(1) [AO 1] A is hinge joint/A Hinge

(2) [AO 2] B is extension/B extension

(3) [AO 2] C is the sagittal plane/Sagittal plane

7. The image shows an athlete in a take-off phase for the long jump. Analyse the lever system at the ankle during the take-off.
-

Marking points (maximum 3)

- (1) [AO 2] The ankle is a second-class lever system/Second-class lever/2nd class
- (2) [AO 2] It is in plantar flexion/Plantar flexion
- (3) [AO 3] It is operating with mechanical advantage/Operates with large loads and little effort/Large loads and little effort

8. Look closely at the image. State which types of joints or examples of joints should replace letters A, B, C and D.
-

Marking guidance

Radio-ulna joint is acceptable for D. This is not named in the specification but is a legitimate answer to this question.

Marking points (maximum 4)

- (1) [AO 1] A is ball and socket/A is ball-and-socket
- (2) [AO 1] B is hinge
- (3) [AO 1] C is wrist
- (4) [AO 1] D is neck

9. Using examples, explain how a long **and** a short bone contribute to the movement of kicking a football.
-

Marking points (maximum 4)

- (1) [AO 1] Femur/Tibia/Fibula
- (2) [AO 2] Long bones provide leverage/Form lever arms
- (3) [AO 1] Tarsals/Carpals
- (4) [AO 2] Short bones are weight bearing/Non-kicking foot holds the body up

10. Look closely at the image of the rugby conversion.
Analyse the movement **and** muscle action at the ankle at position A **and** position B.
-

Marking points (maximum 4)

- (1) [AO 1] At position A the ankle is plantar flexed
- (2) [AO 3] The gastrocnemius is contracting and the tibialis anterior is relaxing
- (3) [AO 1] At position B the ankle is dorsiflexed
- (4) [AO 3] The tibialis anterior is contracting and the gastrocnemius is relaxing

11. Involuntary muscles are not under conscious control.
Identify **two** locations of involuntary muscles.
-

Marking points (maximum 2)

- (1) [AO 1] Cardiac muscle/Heart muscle/Myocardia
- (2) [AO 1] Smooth muscles around blood vessels/Around arteries/Around veins
- (3) [AO 1] Smooth muscle within the stomach wall/Muscles of the digestive tract/Churning muscles in the stomach

12. Look closely at this image.
Identify **both** the resting cardiac output of the performers **and** the difference in maximal cardiac output between the performers.
-

Marking guidance

A range between 7 and eight 8 is acceptable for the second marking point.

Marking points (maximum 2)

- (1) [AO 3] Resting cardiac output is 5 litres per minute/5 litres/5l
- (2) [AO 3] Difference in maximal cardiac output is approximately 7.5 litres

13. Look closely at this image.
State one sporting performer that could be represented by the red curve. Justify your answer.
-

Marking guidance

The list of examples of the AO2 points is not exhaustive.
Accept other appropriate AO2 examples which are anaerobic.

Marking points (maximum 2)

- (1) [AO 2] 100m sprinter/Javelin thrower/50m swimmer
- (2) [AO 2] The red curve is an anaerobic performance/Short duration and high intensity/Cardiac output reaches maximal

14. Look at the image closely.
Identify the respiratory components A **and** B.
-

Marking points (maximum 2)

- (1) [AO 1] A is bronchi/A is bronchus/Bronchi
- (2) [AO 1] B are alveoli/Alveoli/Alveolus

15. State **three** features of the alveoli that enable them for gas exchange.
-

Marking guidance

Partially permeable is the accepted language being used in GCSE biology and should be encouraged in the study of PE. Please credit your students if they use this.

Marking points (maximum 3)

- (1) [AO 1] Has a partially permeable membrane/Partially permeable membrane
- (2) [AO 1] Large surface area/Round shape
- (3) [AO 1] Short diffusion pathway/Thin walls/One-cell thick
- (4) [AO 1] Lots of capillaries/Lots of capillaries around the alveoli/High capillary density
- (5) [AO 1] Large blood supply/Continual supply of blood

16. Explain **one** benefit of fat as a fuel source for a triathlete.

Marking points (maximum 3)

- (1) [AO 2] Triathlon is an aerobic activity
- (2) [AO 2] Fats can provide energy for long durations during the whole triathlon
- (3) [AO 2] Triathlete can avoid fatigue and maintain race pace

17. A boxer is trying to get lighter in order to make weight before a bout. Which performance-enhancing drug might they be tempted to use?

Marking points (maximum 1)

- (1) [AO 2] Option B diuretic/Option B/Diuretic

18. Which of the following is a long-term training effect on the musculoskeletal system?

Marking points (maximum 1)

- (1) [AO 1] Option C Increased strength of ligaments/Option C/Increased strength of ligaments

19. Which of the following is the correct aerobic target training zone?

Marking points (maximum 1)

- (1) [AO 1] Option B 60% to 80% MaxHR/Option B/60% to 80% of MaxHR

20. Which of the following images accurately represents the course for the Illinois agility test?

Marking points (maximum 1)

- (1) [AO 1] Option D/D

21. Assess the importance of power **and** coordination for a gymnast during a floor routine.

Marking points (maximum 6)

(1) [AO 1] Product of strength and speed/Strength x speed/Ability to perform strength movements quickly

(2) [AO 2] Gymnast needs power for tumbles/Power for static jumps/Power for run-up

(3) [AO 3] Good power increases the height of jumps/Greater time in the air/Higher tariff moves

(4) [AO 1] The ability to use different parts of the body together/Move two or more body parts together smoothly/Two or more parts of the body together

(5) [AO 2] Coordination for a cartwheel/Coordination for a split jump/Coordination for a full twist

(6) [AO 3] Good coordination causes the move to look good/Move is technically correct

22. Define the term health.

Marking points (maximum 1)

(1) [AO 1] A state of complete emotional, physical and social wellbeing, and not merely the absence of disease and infirmity

23. Give **one** example of a football player demonstrating good reaction time.

Marking guidance

The list of examples of the AO2 points is not exhaustive.

Accept other appropriate AO2 examples. They must be accurately linked and specific to football.

Marking points (maximum 1)

(1) [AO 2] Goalkeeper reacting to a deflected shot/Defender rapidly changing position to defend a dribble/Forward reacting to the movement and position of the defender

24. Describe continuous training.

Marking points (maximum 2)

- (1) [AO 1] Exercising for a sustained period of time without rest/Sustained exercise/No rest periods
- (2) [AO 1] Training for longer than 20 minutes/Over 20 minutes
- (3) [AO 1] Develops cardiovascular fitness/Cardiovascular endurance
- (4) [AO 1] Running/Cycling/Swimming

25. Ella has conducted a six-week plyometrics training programme and she completed fitness testing before week 1 and after week 6.
Analyse the data provided in the image in relation to all of the fitness tests.

Marking guidance

To achieve the mark, it must be clear which component of fitness has been tested.

Marking points (maximum 3)

- (1) [AO 3] The 30m sprint tests speed and this has increased
- (2) [AO 3] The vertical jump tests power and this has increased
- (3) [AO 3] The sit-and-reach test tests flexibility and this has remained constant

26. Justify the importance of a warm-up for plyometric training.

Marking guidance

The mark must include the benefit of the warm-up and why this would be important specifically for plyometric training.

Marking points (maximum 2)

- (1) [AO 3] Increase muscle temperature so they are less likely to tear during explosive movement/Muscle pliability increases to reduce the risk of injury
- (2) [AO 3] Increase in muscle elasticity so the jumping movements can be achieved
- (3) [AO 3] Increase the range of movement at the joint to be able to jump/Range of movement at the hip increases to be able to complete the jumping exercises
- (4) [AO 3] Be able to mentally prepare for high-intensity training/Feel motivated to complete the high-intensity movements

27. Explain how a cool-down can make Ella's training sessions more effective.

Marking guidance

One sub max AO2 mark for the purpose of the cool-down. Two further AO3 marks for the impact of this on Ella for future training sessions.

Marking points (maximum 3)

- (1) [AO 2] To gradually decrease the heart rate/Gradual reduction in the heart rate/Heart rate remains elevated
- (2) [AO 3] So that lactic acid can be removed/Removal of waste products/Repay oxygen debt
- (3) [AO 3] So Ella does not experience muscle soreness before the next training session/Reduce the effects of DOMS/Training is not hindered by sore muscles

28. Using an example, explain how **one** injury prevention method could help Ella complete six weeks of plyometric training without injury.
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Marking guidance

One AO1 mark for the identification of the injury prevention method. Award two further and linked AO2 marks for an example for Ella during plyometric training and the impact this will have on reducing injury. The marking points have shown examples of this for "correct footwear" and "checking equipment".

Marking points (maximum 3)

- (1) [AO 1] Protective equipment/Protective clothing
- (2) [AO 2] For example, suitable trainers/Correct footwear
- (3) [AO 2] To absorb impact when landing from jumping exercises
- (4) [AO 1] Checking equipment
- (5) [AO 2] For example, broken box/Obstructions on hurdles
- (6) [AO 2] To prevent cuts and bruises when jumping and landing

29. State **two** reasons to complete a PAR-Q.
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Marking points (maximum 2)

- (1) [AO 1] Review medical history/Check for health issues/Assess if any medical conditions exist
- (2) [AO 1] Assess personal readiness to exercise/Check if it is safe to exercise/Suitability to chosen exercises
- (3) [AO 1] Make amendments to training

30.

The principles of training are used by athletes who want to make their training effective. Justify the importance of **both** individual differences **and** training thresholds to improve fitness levels.

Marking points (maximum 4)

(1) [AO 3] Individual differences can take into account multiple factors/Accounts for age, gender, training history, injury history

(2) [AO 3] This will lead to the correct training programme being established so fitness levels can progress as the required rate for that individual/Establishing accurate training/Fitness training is pitched at the correct level

(3) [AO 3] Training thresholds ensure an individual is working at an intensity and duration that targets the aerobic or anaerobic systems

(4) [AO 3] The threshold will be set correctly so the right type of fitness is developed according to the individual needs

31.

A rugby player is using the FITT principle to improve the impact of their weight training. Analyse the use of FITT to increase muscular strength and the impact this has when playing rugby.

Marking guidance



Refer to 9-mark level descriptors:

Please do not accept 'reps' and 'sets' as a measure of intensity. We would be grateful if you could guide the students with this, being clear that these, in fact, dictate the time of the session.

Marking points

- (1) [AO 1] Frequency is the number of sessions per week/Sessions per unit of time
- (2) [AO 2] The rugby player increases from 2 sessions a week to 3
- (3) [AO 3] This means the rugby player can play more games more frequently
- (4) [AO 1] Intensity is the % of 1 rep max/How heavy the player is lifting/How hard they are working within the session
- (5) [AO 2] The rugby player increases 1RM from 85% to 90%
- (6) [AO 3] This means the player can apply greater force when tackling and push their opponent back/Can apply more force to the ground and sprint faster/Can lift a forward higher in the line-out to catch the ball
- (7) [AO 1] Time is the number of reps/Time is the number of sets/Time is the length of the session overall
- (8) [AO 2] The player increases from 3 sets of 6 resp to 4 sets of 6 reps/Increases from 4 sets of 4 reps to 5 sets of 4 reps/Increases their session length from 45 minutes to an hour
- (9) [AO 3] The rugby player can apply force repeatedly when mauling over a long distance/Can maintain longer sprints/Keep up with the ball in ongoing phases of play
- (10) [AO 1] Type is the range of lifts that the player uses/Type is the inclusion of other types of training when weight training/Type is the use of different types of weights
- (11) [AO 2] The rugby player introduces squats into their training programme in week 4/Introduces some plyometric movements into their lifts/Introduces barbells, kettlebells or free weights as well as resistance machines
- (12) [AO 3] The rugby player stays motivated to train due to the variety
- (13) [AO 3] The rugby player strengthens a great range of muscle groups/Increases whole body strength