



Mark Scheme (Results)

Summer 2024

Pearson Edexcel GCSE
In Physical Education (1PE0)
Paper 01 Fitness and Body Systems

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

Section A

Question Number	Answer AO1 – 1 mark	Mark
Q01 (a)	The only correct answer is D – Skeletal Incorrect options: <i>A – Cardiovascular – roles relate to blood flow</i> <i>B – Muscular – roles relate to movement</i> <i>C – Respiratory – roles relate to movement of gases</i>	(1)

Question Number	Answer AO2 – 1 mark	Mark
Q01 (b)	The only correct answer is B – When the performer is active Incorrect options: <i>A – This would require increased blood flow to digestive system</i> <i>C – Additional blood flow would not be required therefore no need for vasoconstriction</i> <i>D – This would result in vasodilation</i>	(1)

Question Number	Answer AO3 – 1 mark	Mark
Q01 (c)	The only correct answer is A – Tidal volume Incorrect options: <i>B – This is vital capacity</i> <i>C – This is the residual volume</i> <i>D – This is the total lung capacity</i>	(1)

Question Number	Answer AO1 – 1 mark	Mark
Q01 (d)	The only correct answer is A – Alveoli Incorrect options: <i>B – Air travels to the lungs via the bronchi</i> <i>C – The bronchioles branch out from the bronchi transporting air to the alveoli</i> <i>D – The diaphragm is a muscle which helps to alter the size of the chest cavity during breathing</i>	(1)

Question Number	Answer AO1 – 4 marks	Mark									
Q02 (a) Q02 (b)	One mark for each correct response: <table border="1"> <thead> <tr> <th>Joint</th><th>(a) Joint classification</th><th>(b) Range of movement</th></tr> </thead> <tbody> <tr> <td>Ankle</td><td>Hinge (1)</td><td>Flexion to extension (1) Or Plantar-flexion to dorsiflexion (1)</td></tr> <tr> <td>Shoulder</td><td>Ball and socket (1)</td><td>Flexion to extension (1) Or Rotation (1) Or Abduction to adduction (1)</td></tr> </tbody> </table> Accept other appropriate response.	Joint	(a) Joint classification	(b) Range of movement	Ankle	Hinge (1)	Flexion to extension (1) Or Plantar-flexion to dorsiflexion (1)	Shoulder	Ball and socket (1)	Flexion to extension (1) Or Rotation (1) Or Abduction to adduction (1)	(4)
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Question Number	Answer AO1 – 1 mark	Mark
Q02 (ci)	One mark for each correct response: • To join bone to bone (1) • To stabilise joints (1) Accept other appropriate responses.	(1)

Question Number	Answer	Mark
	AO1 – 1 mark; AO2 – 1 mark; AO3 – 1 mark	
Q02 (cii)	One mark for each correct point within one bullet point: • Tendons connect muscle to bone (1) allowing movement of the skeleton (1). For example, it allows the arm to move to shoot the ball into the basket (1) • Tendons connect muscle to bone (1) and pull on the bone they are attached to (1). For example, the hamstrings pull the lower leg backwards when preparing to kick a ball/they allow the knee to bend to kick the ball (1) Accept other appropriate responses. One mark for knowledge of role (AO1) – connect muscle to bone One mark for linked example (AO2) One mark for linked expansion to justify why this is important to the performer (AO3)	(3)

Question Number	Answer	Mark									
	AO1 – 4 marks										
Q03 (a) Q03 (b)	One mark for each correct part of the answer: <table border="1"> <thead> <tr> <th>Labelled muscle</th><th>(a) Name of muscle</th><th>(b) Role of muscle</th></tr> </thead> <tbody> <tr> <td>A</td><td>Latissimus dorsi (1)</td><td>Adduct the arm at the shoulder (1)</td></tr> <tr> <td>B</td><td>Gastrocnemius (1)</td><td>Plantar-flexion at the ankle (1)</td></tr> </tbody> </table> Accept other appropriate response.	Labelled muscle	(a) Name of muscle	(b) Role of muscle	A	Latissimus dorsi (1)	Adduct the arm at the shoulder (1)	B	Gastrocnemius (1)	Plantar-flexion at the ankle (1)	(4)
Labelled muscle	(a) Name of muscle	(b) Role of muscle									
A	Latissimus dorsi (1)	Adduct the arm at the shoulder (1)									
B	Gastrocnemius (1)	Plantar-flexion at the ankle (1)									

Question Number	Answer AO1 – 1 mark; AO2 – 1 mark; AO3 – 1 mark	Mark
Q03 (c)	One mark for each correct point within one bullet point: Cardiac muscle is not consciously controlled (1) so the performer does not need to think/instruct the heart to contract (1) this allows them to concentrate on their game/techniques/tactics (1) Accept other appropriate responses. One mark for knowledge of characteristic (AO1) One mark for link to performer (AO2) One mark for linked expansion to justify why this is important to the performer (AO3)	(3)

Question number	Answer AO1 – 2 marks; AO2 - 2 marks; AO3 - 2 marks	Mark
Q04 (i) Q04 (ii)	One mark for each correct point within one bullet point: Hip - Extension has occurred at the hip (1) due to the contraction of the gluteals/gluteus maximus (1) allowable due to the relaxation of the hip flexors (1) Knee - Extension has occurred at the knee (1) due to the contraction of the quadriceps (1) allowable due to the relaxation of the hamstrings (1) Accept other appropriate responses. One mark for reason for linked antagonistic pair (AO1) One mark for linking correct agonist muscle action to cause movement (AO2) One mark for analysis of joint action in image (AO3)	(6)

Question Number	Answer AO2 – 1 mark	Mark
Q05 (i)	For example: Group 1 - Type IIX (1) - Type 2x (1) - Fast twitch (1) Accept other appropriate responses.	(1)

Question Number	Answer AO2 – 1 mark	Mark
Q05 (ii)	For example: Group 2 • Type I (1) • Slow twitch (1) Accept other appropriate responses.	(1)

Question Number	Answer AO1 – 1 mark	Mark
Q06 (a)	One mark for correct answer: • Semi-lunar valve (1)	(1)

Question Number	Answer AO1 – 1 mark	Mark
Q06 (b)	For example: • It prevents backflow (of blood) (1) Accept other appropriate responses.	(1)

Question Number	Answer AO1 – 1 mark	Mark
Q07 (a)	For example: • Transport of oxygen/O₂ (1) • Transport carbon dioxide/CO₂ (1) • Regulation of body temperature Accept other appropriate responses.	(1)

Question Number	Answer	Mark
	AO2 – 1 mark; AO3 – 1 mark	
Q07 (b)	Clotting of open wounds: For example: Prevents further blood loss (1) so the performer can carry on playing (1) Accept other appropriate responses. One mark for reason why important to performer (AO2) One mark for linked expansion to justify why this is important to the performer (AO3)	(2)

Question Number	Answer	Mark
	AO3 – 1 mark	
Q08 (ai)	One mark for correct answer: Load (1)	(1)

Question Number	Answer	Mark
	AO3 – 1 mark	
Q08 (aii)	One mark for correct answer: Effort (1)	(1)

Question Number	Answer	Mark
	AO3 – 1 mark	
Q08 (aiii)	One mark for correct answer: Fulcrum (1)	(1)

Question Number	Answer	Mark
	AO2 – 1 mark	
Q08 (b)	One mark for correct answer: Second (1)	(1)

Question Number	Answer AO1 – 1 mark; AO2 – 1 mark	Mark
Q08 (c)	One mark for each correct point within one bullet point: • A greater load can be moved <u>with</u> a (relatively) small effort/less effort (1) so the trampolinist can get more height/bounce higher (1) Accept other appropriate responses. One mark for knowledge of mechanical advantage (AO1) One mark for linked expansion to explain its importance to the trampolinist (AO2)	(2)

Question number	Answer AO3 - 2 marks	Mark
Q08 (di) Q08 (dii)	One mark for correct answer: (i) Plane • Sagittal (1) (ii) Axis • Frontal (1) Accept other appropriate responses.	(2)

Section B

Question Number	Answer AO3 – 1 mark	Mark
Q09 (a)	The only correct answer is B – Progressive overload Incorrect options: A – Individual needs cannot be established as no detail about their strengths/weaknesses/aims C – Reversibility – has not been applied as programme shows progress D – Thresholds of training cannot be established as no data to indicate use of target zones	(1)

Question Number	Answer AO2 – 1 mark	Mark
Q09 (b)	The only correct answer is D – Use body weight as resistance Incorrect options: A – This is the principle Type B – This is the principle Frequency C – This is the principle Time	(1)

Question Number	Answer AO2 – 1 mark	Mark
Q09 (c)	The only correct answer is D – Resistance Incorrect options: A – Aerobics a form of continuous training B – Fartlek running based form of exercise C – Pilates focuses on core strength	(1)

Question Number	Answer AO3 – 1 mark	Mark
Q09 (d)	The only correct answer is C – Average Incorrect options: A – Would have scored more than 27 B – Would have scored between 17 and 26 D – Would have scored between 0 and 5	(1)

Question Number	Answer AO2 – 2 marks	Mark
Q10 (i)	One mark for each correct point within one bullet point: Stronger heart/increased SV (1) therefore during exercise increased blood flow/increased oxygen delivery/increased CO₂ removal (1) Accept other appropriate responses.	(2)

Question Number	Answer AO2 – 2 marks	Mark
Q10 (ii)	One mark for each correct point within one bullet point: - Diaphragm contracts with greater force (1) increasing volume of chest cavity/increasing volume of air brought into the lungs (1) - Increases space available for the lungs to fill/chest cavity enlarges (1) so more air can be inhaled per breath (1) Accept other appropriate responses.	(2)

Question Number	Answer AO1 – 1 mark; AO2 – 1 mark; AO3 – 1 mark	Mark
Q11 (a)	One mark for each correct point within one bullet point: Due to his ill health/long illness he is unable to exercise (1) the drop in frequency of exercise will mean his fitness will drop (1) because of his drop in fitness he will be unable to work at the same intensity reducing the level of his performance (1) Accept other appropriate responses. One mark for reason linked to ill health (AO1) One mark for linking ill health to drop in ability to exercise (AO2) One mark for impact on fitness and therefore performance (AO3)	(3)

Question Number	Answer	Mark
	AO1 – 1 mark; AO2 – 1 mark	
Q11 (b)	One mark for each correct point within one bullet point: • So he can set realistic training goals (1) so he doesn't work too hard given his lower level of fitness /become demotivated trying to do what he could do before (1) Accept other appropriate responses. One mark for reason for testing (AO1) One mark for expansion why this is necessary after a break in training (AO2)	(2)

Question Number	Answer	Mark
	AO1 – 1 mark	
Q11 (ci)	One mark for correct answer: • Harvard step test (1) Accept other appropriate responses.	(1)

Question Number	Answer	Mark
	AO1 – 1 mark; AO2 – 1 mark; AO3 – 1 mark	
Q11 (cii)	One mark for each correct point within one bullet point: • Cooper 12-minute swim (1) as this test takes place in the pool and George's sport does not (1) if George is weak at swimming this will not give an accurate representation of his cardiovascular fitness for his sport (1) Accept other appropriate responses. One mark for correct choice of test (AO2) One mark for knowledge of test (AO1) One mark for reasoning why this is least valid (AO3)	(3)

Question Number	Answer AO1 – 3 marks	Mark
Q11 (d)	One mark for each correct point within one bullet point: Run/walk for 12 minutes around an area (1) count the number of laps around the area you complete (1) calculate the distance run by multiplying the number of laps by the distance of each lap (1) Accept other appropriate responses.	(3)

Question Number	Answer AO1 – 2 marks; AO2 – 2 marks	Mark									
Q12 (a) Q12 (b)	One mark for each correct part of the answer: <table border="1"> <thead> <tr> <th>Fitness test</th><th>(a) Component of fitness</th><th>(b) How component of fitness is used in basketball</th></tr> </thead> <tbody> <tr> <td>Grip dynamometer</td><td>Strength (1)</td><td> - To shoot (1) - Long pass (1) - Box out/shield/screen/guard ball from opponent (1) </td></tr> <tr> <td>One-minute press-up</td><td>Muscular endurance (1)</td><td> - To repeatedly use muscles to run/pass/shoot/dribble (1) - To pass throughout the game (1) - To be able to keep shooting (1) </td></tr> </tbody> </table> Accept other appropriate response.	Fitness test	(a) Component of fitness	(b) How component of fitness is used in basketball	Grip dynamometer	Strength (1)	- To shoot (1) - Long pass (1) - Box out/shield/screen/guard ball from opponent (1)	One-minute press-up	Muscular endurance (1)	- To repeatedly use muscles to run/pass/shoot/dribble (1) - To pass throughout the game (1) - To be able to keep shooting (1)	(4)
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Question Number	Answer AO3 – 1 mark	Mark
Q12 (ci)	One mark for correct answer: Player 2 (1)	(1)

Question Number	Answer AO2 – 1 mark; AO3 – 1 mark	Mark
Q12 (cii)	One mark for each correct point within one bullet point: • Player 3 achieves at least very good in all tests (1) indicating they have the best all-round fitness for basketball (1) • Player 3 has the best scores overall (1), so he doesn't have an area of significant weakness to affect his game (1) Accept other appropriate responses. One mark for correct use of data (AO3) One mark for link to basketball (AO2)	(2)

Question Number	Answer AO1 – 1 mark; AO2 – 1 mark	Mark
Q13 (i)	One mark for each correct point within one bullet point: • Growth hormones can help build muscle (1) this could make the sprinter faster/ finish the race quicker (1) Accept other appropriate responses. One mark for advantage of growth hormones (AO1) One mark for applying this advantage to the sprinter (AO2)	(2)

Question Number	Answer AO1 – 1 mark; AO2 – 1 mark	Mark
Q13 (ii)	One mark for each correct point within one bullet point: • They are a banned substance/cheating (1) therefore risk being disqualified (1) • Increased health risk to the performer (1) for example heart disease (1) Accept other appropriate responses. One mark for disadvantage of growth hormones (AO1) One mark for applying this disadvantage to the sprinter (AO2)	(2)

Section C

Question Number	Indicative content AO1 – 3 marks; AO2 – 3 marks; AO3 – 3 marks	Mark
Q14	Reward acceptable answers. Responses may include, but are not limited to, the following: Knowledge and understanding of the training methods (AO1): • Fartlek training - running over varied terrains/running at varied intensities (AO1) • Circuit training - working at different stations for a set time (AO1) • Weight training – high reps with low load/low reps with high load (AO1) Application of knowledge, linking the training method to the needs of the footballer (AO2): • Fartlek training - running over varied terrains/running at varied intensities (AO1) will improve her CV fitness she needs to continue to work the body over 90 minutes (AO2) • Circuit training - working at different stations for a set time (AO1) so she can tailor the circuit to work on skills, such as shuttles whilst dribbling, as well as her fitness (AO2) • Circuit training - working at different stations for a set time (AO1) so she can tailor the circuit to work on her agility, e.g., running in and out of cones (AO2) • Weight training – high reps with low load/low reps with high load (AO1) she would use low reps with relatively high loads to work on her muscular strength so she is less like to be pushed off of the ball (AO2) Evaluation of topic, making reasoned judgement(s) about the importance of the training method to the footballer (AO3): • Fartlek training is important, although she will not play on a varied terrain she will need to run at different intensities and increase her CV fitness to maintain quality of play (AO3) • Circuit training is also important provided she selects relevant stations for agility and/or CV fitness otherwise she will not be working on her agility (AO3) • Weight training will be the most effective method (of the 3 suggested) to increase her strength so must be included in her programme. (AO3) • This is a good mix of training methods offering variation to avoid boredom and provided set up correctly should allow her to develop the fitness she requires (AO3) • Credit evaluation of training method where alternative 'better' method is justified (eg SAQ for agility) Students who only show achievement against AO1 will not be able to gain marks beyond Level 1.	(9)

Level	Mark	Descriptor
	0	No rewardable material
1	1-3	• Demonstrates isolated elements of knowledge and understanding, with limited technical language used (AO1). • Limited attempt to apply knowledge to question context (AO2). • Generic assertions may be presented (AO3 - evaluation).
2	4-6	• Demonstrates mostly accurate knowledge and understanding, including appropriate use of technical language in places (AO1). • Applied knowledge to question context (AO2). • Attempts at drawing conclusion, with some support from relevant evidence (AO3 – evaluation).
3	7-9	• Demonstrates accurate knowledge and understanding throughout, including appropriate use of technical language (AO1). • Applied detailed knowledge to question context throughout (AO2). • Reaches a valid and well-reasoned conclusion supported by relevant evidence (AO3 – evaluation).