

PHYSICAL EDUCATION

Paper 0413/11

Theory

Key messages

Candidates should note the number of marks awarded in questions to ensure they answer the question in appropriate depth.

Where questions require the use of a physical activity throughout an answer, candidates should carefully consider their choice before beginning to answer.

Where questions require candidates to apply their understanding to a physical activity, candidates should avoid giving generic descriptions.

Candidates should be aware of the level of detail required from the key word in the question such as: explain; describe; suggest; state and identify.

Candidates should avoid using part of the question in their answer.

General comments

The majority of candidates responded to all questions and there was no evidence to suggest that there was insufficient time to complete the paper. The standard of responses was generally good with answers clearly constructed in many cases.

Comments on specific questions

Question 1

Many candidates were able to correctly name both components of blood.

Question 2

- (a)(i) The majority of candidates were able to identify the bones from the diagram with many achieving full credit.
- (ii) Most candidates gained credit for the function, but the examples were less well answered. The most typical response was protection of the brain when heading the ball in football. Candidates who used other physical activities usually used the same function with an appropriate example. Candidates often found the example more difficult for the second function.
- (iii) Most candidates were able to correctly classify the bones labelled A and B.

Question 3

- (a) Most candidates were able to identify the Ruler Drop Test. The descriptions often had enough detail to gain full credit. There were examples of candidates describing activities that could demonstrate reaction time but were not a fitness test.
- (b) Most candidates were able gain credit for identifying two components of fitness. There were examples of candidates using the components that were named in the question, therefore they could not be given credit. In most cases the explanation was applied to table tennis but there were some responses that were generic.

- (c) A number of candidates named part of the continuum and did not fully answer the question. There was usually sufficient information in the second part of the answer to award credit for the justification.
- (d) This question was answered well by most candidates.

Question 4

- (a) Many candidates demonstrated some understanding of the concepts. Most gave shaking hands with an opponent after a game and helping an opponent back to their feet after falling as examples of sportsmanship. The most common example of gamesmanship was time wasting in the game but there were many examples given of breaking the rules of the game which would be regarded as cheating rather than gamesmanship.

Question 5

- (a) This question was generally answered well. There was some confusion by some candidates over guidance and feedback in their answer. More candidates were able to achieve credit for disadvantages than for advantages of visual guidance. The most common responses for disadvantages were the guidance might be poor resulting in errors in performance and that a performer might not be a visual learner. The advantages given usually related being able to see the whole skill performed well.
- (b)(i) The most typical response was usually the use of a harness in gymnastics, the coach moving the hands of the performer into the correct position when shooting a basketball to allow a performer to feel the skill. A common error was to provide the benefit of guidance rather than an example.
- (ii) This question was answered well, and most answers focused on safety or being able to take part in advanced skills.
- (c) Most candidates answered the question well with responses such as a performer knows what to do next and it motivates a performer to work hard.

Question 6

- (a)(i) A number of candidates described the graph rather than give reasons for there being a difference in heart rate between the fit and unfit performer. Correct answers included the fitter person having a bigger heart, the walls of the heart being thicker and differences in age and genetics.
- (ii) Most candidates were able to gain credit with responses relating to the removal of lactic acid and taking in excessive amounts of oxygen. The most common error was to describe the reduction of breathing rate, heart rate and body temperature without mentioning that this should be a gradual process.
- (b) This was answered well by most candidates.

Question 7

- (a) Most candidates displayed a good understanding of the topic. The most common responses were gravity, air resistance and muscular force with appropriate explanation relating to the sprinter.
- (b)(i) Most candidates gained partial credit for their answer. The most common error was not being precise when indicating the components of the lever. For example, there were several cases of drawing a line of the effort to the bones in the forearm rather than the bicep muscle.
- (ii) Several candidates either confused the type of lever being used or gave the movement of flexion as their answer.

Question 8

- (a) Answers needed to identify explosive or high intensity activity, such as sprinting for answer 1, and an endurance activity such as long distance running for answer 2. Most candidates gained the initial credit.
- (b) Most candidates answered the question well and displayed an understanding of the topic. Typical answers related to fatigue, speed of contraction and the amount of force produced. The most common error was to use the characteristics of activities that would benefit from the use of fast twitch muscle fibre.
- (c)(i) The majority of candidates gave stamina or cardiovascular endurance as their answer. The most common error was just stating endurance, which could be applied to either muscular or cardiovascular endurance and was therefore regarded as too vague.
- (ii) Most candidates gained partial credit. The most common answers related to age, genetics and training. The explanations were less well given. When using gender as the explanation, there needed to be some detailed information to gain credit and not just that males are bigger, stronger or fitter than females.
- (d) The most common correct answer related to the increase in red blood cells and the improvement in cardio vascular endurance. Candidates generally gave a greater variety of disadvantages than advantages. The most common disadvantages related to altitude sickness, the cost and that it must be repeated as the benefits are temporary.

Question 9

Few candidates gained full credit. Some candidates gained partial credit for identifying the contraction as eccentric but there was some confusion with concentric contraction being named. The description was often too vague as candidates described the muscle as lengthening and relaxing rather than contracting.

Question 10

Most candidates gained credit here. The most common appropriate responses related to fatigue, dizziness and nausea. In many cases, candidates found the third answer difficult to provide often repeating an already given answer.

Question 11

- (a) This was generally a well answered question. Most candidates were able to gain at least partial credit. There were no common errors made by candidates.
- (b) The majority of candidates were able to gain credit for the response that tendons connect muscles to bone.

Question 12

- (a) Most candidates gained credit with the most common responses relating to discrimination. Access to activities was accepted but not when linked to facilities as that formed part of the question. The most common error was to state a disability and to describe how the disability meant not being able to participate in physical activities.
- (b) This was a very well answered question with a wide variety of responses given. The most common answers related to improving the quality of facilities, increase in tourism, an increase in national pride and the improvements to the economy.

Question 13

- (a) In many cases candidates answered the decision making and output stages well, applying their answers to the player taking the penalty. The most common error when answering the input and feedback stages was to give a generic response that provided too little information.
- (b) Most candidates demonstrated a good level of understanding regarding the amount of information that can be stored in the memory and the length of time that information can be stored. There were few other appropriate responses. A common error was to give a characteristic of short-term or long-term memory without demonstrating a difference.

Question 14

- (a) Most candidates gained at least partial credit with many achieving full credit. The most common correct responses related to identifying strengths and weaknesses of the performer, being able to compare their results to others and helping to develop a training programme.
- (b) This was generally a well answered question. The most common correct responses related to a cool down, ensuring good levels of hydration and wearing appropriate footwear. Some candidates gave two examples of activities that would be part of a cool down, while several gave taking part in a warm up which formed part of the question, and wearing appropriate clothing which was too vague to justify credit.
- (c) Most candidates answered this question well with responses relating to the improvement to components of fitness required for cross country and that continuous training replicated features of the event. There was some repetition of answers relating to the components of fitness.

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Paper 0413/12

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Candidates should avoid using part of the question in their answer.

General comments

The majority of candidates responded to all questions and there was no evidence to suggest that there was insufficient time to complete the paper. The standard of responses was generally good with answers clearly constructed in many cases.

Comments on specific questions

Question 1

Most candidates were able to identify the blood vessels described in the question.

Question 2

- (a) The majority of candidates gained partial credit, but few achieved full credit. The most common error was incorrectly identifying the joint (fibrous) capsule.
- (b) Many candidates correctly identified the function of the synovial membrane as enclosing the joint or preventing synovial fluid from leaking from the joint.
- (c)(i) Although many candidates correctly identified the joint at the knee as a hinge joint, several identified it as a ball and socket joint.
- (ii) Most candidates identified the bones correctly, and many also gained credit for giving patella as part of the joint.

Question 3

- (a) This was a well answered question and most candidates gained at least partial credit with many achieving full credit.
- (b) The majority of candidates gained credit with answers relating to heart problems and the increase in blood viscosity. A small number gave responses relating to a performer being banned or fined which did not answer the question.

Question 4

- (a) The majority of candidates gained credit by correctly naming three SMARTER principles but the application of the principles to the sprinter was less well answered. Candidates who used the information provided in the question appropriately, often achieved full credit.
- (b) Many candidates correctly identified 'Agreed' as a principle not applied to the setting of the target and gave an appropriate cause.

Question 5

- (a) Most candidates gained credit for identifying the structures as the right atrium and left ventricle. A small number either did not include right and left in their answer or gave them the wrong way around.
- (b) Candidates did not need to name the valve as this is not part of the syllabus. Therefore, credit was given if 'valve' was part of the answer. The most common function given was to prevent backflow of blood.
- (c) Candidates needed to give a detailed answer to gain credit, including stating that oxygenated blood was carried by the pulmonary vein rather than just stating blood, which was part of the question.

Question 6

Most candidates gained credit for the disadvantage to the sponsor being caused by damage to their image resulting from poor behaviour of the person they are sponsoring. The most common error was relating answers to the sponsor rather than the professional football team and the international event.

Question 7

This was generally a well answered question. Most candidates gained credit with many achieving full credit. The most common error was using a bicep curl as the example of the movement rather than the upward phase which provides flexion. The examples of the movement provided in the table should have given candidates an indicator to the level of detail required.

Question 8

- (a) This was usually answered well, and most candidates demonstrated an understanding of the advantages of circuit training. The most common answers included that the variety of activities prevents boredom, many muscle groups can be exercised and aerobic and anaerobic energy systems can be used during a training session.
- (b) Candidates found it more challenging to give the same level of detail that was generally provided in (a). A frequent answer given was that plyometric and continuous training was boring without any justification.
- (c) Generally, this was a very well answered question and candidates showed a good understanding of the topic and applied it well to someone taking part in a sports team. The most common answers related to how improved social benefits of a team can improve mental health and the reduction to the levels of stress that can result from taking part in team sports.

Question 9

- (a) Most candidates gained credit for this question by identifying that teenagers have a greater energy need than younger children and justified this statement with answers relating to teenagers being more involved in organised sports, having bigger bodies and a more active lifestyle.
- (b) A number of answers lacked the level of detail required for credit. Answers needed to give an effect of not having a balanced diet and how this may affect a performer in their named activity. The most common correct response related to a lack of energy and the performer not being able to complete a long-distance race.

Question 10

- (a)(i) Many candidates were able to give responses that indicated a perceived risk is one that is personal to the performer.
- (ii) Most candidates gained at least partial credit with a number achieving full credit. A common misunderstanding seemed to be due to not reading the question fully and resulted in answers relating to running around the pool, slipping due to wet tiles and using a floatation aid as a strategy. The question asked candidates to identify risks when swimming in the pool and to describe strategies other than the use of floatation aids.
- (b) This was a well answered question and most candidates gave the use of breathing techniques and mental rehearsal with an appropriate explanation. A significant number of candidates gained credit by naming visualisation but showed confusion by explaining mental rehearsal.

Question 11

- (a) Many candidates gained credit with responses such as the lack of rules, or that play is not serious or competitive.
- (b) Candidates gave a wide range of appropriate factors with explanations.

Question 12

- (a) The vast majority of candidates gained credit for correctly naming the two stages of learning. The examples were less well given as responses were often not applied to the named activity and generic responses were given. There were many examples of candidates using the same characteristic in both stages of learning. Many mistakes were made with examples given in the cognitive stage and a few mistakes were made in the autonomous stage. This did not meet the demands of the question as it required the characteristics to be different.
- (b) The majority of candidates gained credit for placing the skills appropriately on the continuum. The second part of the question was less well answered. In the justification, candidates needed to apply their answer to both skills. Generally, candidates were able to provide detail regarding skill A, the throwing of the ball, but lacked detail in the response for skill B.
- (c) Generally candidates gave good responses to this question. The most common responses was extrinsic with the typical benefit relating to the use of a coach. There was some confusion with several candidates mixing types of guidance with feedback.

Question 13

- (a) A number of candidates were given credit for identifying the two concepts of force and many were also able to give an appropriate definition. A common error was defining mass as the weight of an object and not including an increase in speed or velocity in the definition of acceleration.
- (b) The vast majority of candidates were able to identify two appropriate forces.

Question 14

- (a) Most candidates were able to correctly complete the equation.
- (b)(i) The majority of candidates gave responses relating to the lack of oxygen or stated that the activity is anaerobic. Fewer candidates were able to achieve further credit but stronger candidates were able to relate their answers to lactic being a waste product when glucose produces energy.
- (ii) The question was generally answered well with the most common answer being the use a cool down or stretching.

Question 15

Most candidates were able to name components of fitness, but the explanations were less well given. The question asked for an explanation to be provided which required a degree of detail to achieve credit. An example of an answer that gained full credit was one that named a component of fitness e.g. speed, then explained that this allowed the performer to increase the stroke rate so the boat would move faster.

Question 16

- (a) This question was generally well answered. Correct answers included oxygen rather than air and that it is used or consumed rather than taken in or breathed in.
- (b)(i) Most candidates identified the marathon runner as having the highest $\text{VO}_2 \text{ max}$. Some candidates confused the requirements of the question which asked why the performer had the highest $\text{VO}_2 \text{ max}$ rather than its benefit to the athlete.
- (ii) This was a well answered question. The only common error was a lack of training which was regarded as too vague. To gain credit, candidates needed to identify the type of training that could affect $\text{VO}_2 \text{ max}$.
- (c) Most candidates were able to identify two characteristics of the alveoli other than the thickness of the walls. The descriptions were generally appropriate for the characteristic.

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Candidates should avoid using part of the question in their answer.

General comments

The majority of candidates responded to all questions and there was no evidence to suggest that there was insufficient time to complete the paper. The standard of responses was generally good with answers clearly constructed in many cases.

Comments on specific questions

Question 1

- (a) The majority of candidates correctly identified three components of fitness but applying them to the position of goalkeeper provided a greater challenge. Many candidates gave a generic description of a correctly named component which did not provide sufficient information to gain credit for its application.
- (b) This was generally a well answered question and most candidates were able to identify pulse raiser and stretches and gave appropriate examples. Some candidates found the skill-related activity a little more difficult to name and provide an appropriate example for a goalkeeper.
- (c) Most candidates gave a good definition and example of sportsmanship. The most common example being shaking hands after the game or related to helping an injured player. The definition of gamesmanship was less clearly described with candidates often repeating the definition of sportsmanship and the example given often meant breaking the rules of the game.

Question 2

- (a) Most candidates gained credit for the description of sport and play. The description of physical recreation was less well given. Some candidates mentioned the time that people have for physical recreation rather than the activity.
- (b) This was a well answered question with many candidates achieving maximum credit. The most frequently seen answers related to family, peer influences and facilities.

Question 3

- (a) Most candidates gained credit for naming appropriate methods of training, Stronger candidates gave an appropriate justification by linking their answer to cross country running. The most common response linked continuous training as it replicated a cross country race.
- (b) This was a very well answered question and many candidates gained full credit with the most frequent responses being hypertrophy, lower resting heart rate and an increase in cardio vascular endurance.
- (c)(i) Most candidates showed a good understanding of EPOC.
- (ii) Candidates showed a good understanding of the topic and gave a wide variety of appropriate responses.

Question 4

- (a) Most candidates showed a good understanding of the types of anxiety. The common error was not linking the description to the activity the candidate had named and giving generic responses.
- (b) This was a well answered question and most candidates gained credit with many achieving full credit. The most common responses were mental rehearsal and deep or controlled breathing. The only common error was giving visualisation, as this technique was part of the question.

Question 5

Most candidates correctly identified the type of PED and the health problem that may occur. Fewer candidates gave an example of the effect on performance that related to the activity, instead giving a generic effect of the PED.

Question 6

- (a)(i) Most candidates were able to justify the tennis serve being classified as a closed skill. The most common response was not being affected by the environment.
- (ii) Rather than naming the continuum, a significant number of candidates instead named the part of a continuum that the serve was closest to, which was too vague to justify credit. The justifications were generally well described.
- (b)(i) The decision making and output of the information processing model were generally well described. Many candidates did not describe how information was obtained during the input stage and descriptions of feedback was often generic rather than saying how the player could use feedback during the game.
- (ii) Most candidates were able to explain the concept of single-channel hypothesis.

Question 7

Candidates showed a good understand of the traditional features of amateur and professional performers. The most common error was that answers did not demonstrate the differences between the performers and only gave the feature of amateur or professional performers.

Question 8

- (a) The majority of candidates gave push/pull or used mass x acceleration as their answer.
- (b) This was a very well answered question. Most candidates identified two forces and generally applied them correctly to a sprinter.
- (c)(i) Many candidates were able to draw and label a first class lever. The drawing of the diagrams in some cases could have been improved but the positioning of the components justified the credit awarded.

- (ii) The majority of candidates gained credit for the question with most giving heading the ball in football, but many gave examples such as the position of the head changing to look upwards when the body is preparing to play an overhead smash in badminton.

Question 9

- (a) Most candidates correctly gave a hinge or a ball and socket as their example.
- (b)(i) This was a well answered question and there were no common errors made by candidates.
- (ii) Most candidates gained credit for this question. Descriptions of the synovial membrane proved to be the only feature of a synovial joint that caused confusion for candidates.

Question 10

Most candidates demonstrated a good understanding of the muscle fibre types. Applying these features to a long-distance cyclist was generally done well for fast twitch muscle with the most common response being sprinting at the end of the race. The application for slow twitch was often missing from answers.

Question 11

- (a)(i) There was a degree of confusion in answering this question. Several candidates gave the calculation for each breathing volume. Those that identified the volumes usually correctly identified tidal volume and residual volume correctly, less so for vital capacity.
- (ii) Generally the calculations were done well. However, the units of measurement were often not included in the answer.
- (iii) The calculation for minute volume was less well done than the calculations for the previous question and again the unit of measurement was often missing from the answer.
- (b) Most candidates answered this correctly. Candidates were usually able to identify the two respiratory muscles. The functions were less well answered.

Question 12

- (a) To answer the question, candidates needed to identify a structure of the blood vessel and explain how it achieved a function. Most were able to do this using the features of wall size and thickness and how these affect the pressure of blood as it passes through the vessel.
- (b) The majority of candidates were able to identify that cardiac output describes the amount of blood pumped from the heart to gain partial credit. Further credit was for the unit of time which many candidates confused with heart rate.

PHYSICAL EDUCATION

Paper 0413/02
Coursework

Key messages

Centres should read the assessment conditions for each physical activity prior to filming to ensure marks can be supported by the evidence.

Filmed evidence should be organised by activity with multiple candidates tagged. It will allow a number of candidates, at similar levels, to be filmed at the same time and this aids the process of moderation, this has the added benefit of reducing the amount of time the centre spends filming each activity.

Filmed evidence for each activity should be continuous and not a series of short clips.

Order of Merit forms and logs should be uploaded at the component level of the Submit for Assessment platform and not against the individual candidates. Please upload typed copies where possible to ensure all content is legible and only the pages with the required information are included.

General comments

The overall standard of the coursework paperwork was good and there were few mistakes in addition by centres. Most centres used the sample database effectively.

The filmed evidence was generally clear and in activities such as tennis the action of the performer and the outcome of the skill could usually be seen. However, some centres submitted many small clips for each activity instead of linking the clips together in a continuous film.

Some centres spent time inserting additional music, introductions to the candidates and films of the candidates warming up for each the activities, which resulted in elaborate films. However, this was not always helpful and generally did not aid moderation. It is important that the sound from the activities can be heard.

Before uploading films and documentation onto the platform, please save them with the name of the activity and suitable other additions to the file names. In some cases, forms and films from some centres were not labelled, making it difficult to find the activity to be watched or to locate the paperwork that supported the activity.

Comments on specific activities

Games

The level of demand must be appropriate for the ability of the candidate and match the mark awarded. In some cases candidates were only filmed in very small-sided games or games where the opposition (and teammates) did not provide sufficient level of demand to enable skills to be performed at a level that supported the awarded marks. Please read the assessment conditions for each activity in the Coursework Guidelines booklet. This will help to determine the best activities that will support the marks awarded. For higher-marked candidates, a school/club level game or a game of a similar standard is required. For higher-marked candidates, the balance of the filmed evidence can be strongly in favour of applied situations with isolated/basic skills allocated only a short time.

Rounders

The filmed evidence sent by centres generally focused on the ability of candidates to strike and field the ball. In some situations, the pitches used by the centres did not allow the candidates to demonstrate the distance they could hit the ball before its first bounce as the pitches were within an enclosed court. The best evidence of higher-ability candidates included tactical play within the recordings and advanced field placings.

Weight Training

Many centres submitted logs and filmed evidence. Good evidence clearly showed the technique and included a summary of the exercise where candidates applied theoretical knowledge. Weaker candidates needed a greater understanding of the principles that underpin this activity. All sections of the log should be completed, and more than one sheet is required to provide an effective programme. The Coursework Guidelines booklet states that candidates should be filmed giving a brief verbal explanation of the exercise. An explanation of the correct technique and the necessary safety instructions are not needed as these can be seen in the filmed evidence. Candidates should not provide a running commentary over the film they have submitted. Good filmed evidence included the optimum performances from the final week of candidates' training programmes. This allowed candidates to demonstrate the effect the programme had on their bodies and allowed progression to be seen.

Skiing

Filmed evidence was generally produced on a red run and most candidates were able to demonstrate the different techniques they had mastered for skiing. Some centres also included filmed evidence of the candidates reproducing these techniques at speed and this was helpful when awarding higher-level marks.

Track and field athletics

When measuring the different activities in track and field athletics, candidates must follow the official rules of that activity. For example, the shot must be held correctly throughout, and it is a foul throw if a candidate walks out of the front of the throwing area.

Times for both the 100 and 200 meters achieved by each candidate must be filmed. Each one should be a continuous film from one angle. Some centres filmed candidates from several angles and joined clips together making confirmation of times difficult. It is important that the person operating the stopwatch is on the finish line of the race.

Hill Walking

The evidence provided for hill walking must include a detailed route card and logbook. The route cards will therefore need to span several pages and be detailed enough to demonstrate each candidate's ability to use Naismith's rule on several occasions. Centres placing their candidates in the higher levels must ensure that candidates are filmed applying Naismith's rules in an interview and that these candidates complete one of the unforeseen situations. Candidates should walk in groups of four when possible and should use the route cards and the map throughout the duration of the walk. Higher-level candidates did not rely on the route being drawn onto the map.