

**AQA**

**AS**

# Physical Education



***Questions and Answers***

# Questions and answers

This CD comprises a worksheet with some exam-style questions, a summary of some frequently asked questions and, finally, a sample unit test. Mark schemes, specimen answers and examiner commentaries are provided to clarify what is required and to enable you to assess your answers. These examples from across the specification will give you an idea of the kinds of questions you will be asked in the Unit 1 exam paper and will therefore help you with your revision.

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## Worksheet

This worksheet comprises three questions in Section A and one question in Section B. Answer all three questions in Section A and the question in Section B.

The maximum mark for this paper is 48 (12 marks per question).

Mark allocations are shown in brackets.

The time allowed for this worksheet is 1 hour 15 minutes.

## Section A

Answer **all** questions.

### Question 1

**During exercise a person's heart rate increases to meet the extra oxygen demand required by the muscles.**

**a (i) Explain how the increasing level of carbon dioxide in the blood raises the heart rate.** (3 marks)

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**(ii) How is carbon dioxide transported in the blood?** (2 marks)

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**b As we exercise, the demand for oxygen by the muscles increases. How is breathing rate controlled to meet these demands?** (3 marks)

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# Questions and Answers



**c Gas exchange and oxygen delivery influence performance in exercise and sporting activities. Explain how oxygen diffuses from the lungs into the blood and how it is transported to the tissues.**

(4 marks)

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## Question 2

**a A coach may use Bandura’s model of observational learning to help teach a correct technique to a sports performer. Name and explain the four stages of observational learning.**

(4 marks)

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**b What other factors should a coach consider for demonstrations to be effective?**

(4 marks)

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# Questions and Answers



- c Explain how feedback changes as the games player moves from the cognitive stage of learning, through the associative stage of learning, to the autonomous stage of learning.** (4 marks)

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## Question 3

- a Explain what is meant by the following terms:**
- (i) discrimination**
  - (ii) stereotype**
  - (iii) target group**
- (3 marks)

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- b The Youth Sport Trust has identified teenage girls as a target group. The Nike–Youth Sport Trust ‘Girls in Sport’ project is a School Sports Initiative designed to help teachers encourage more girls of secondary school age to take part in sport. Give ways in which school PE departments can increase the interest and participation of teenage girls in physical activity.** (4 marks)

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# Questions and Answers



**c What are the main objectives of Sport England?**

(2 marks)

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**d Social class may be a limiting factor in sports participation for those on comparatively low incomes. Give reasons why this may be the case.**

(3 marks)

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## Section B

Answer this question.

### Question 4

**You have been asked by a friend to assist in the coaching of a local hockey team that trains on a regular basis.**

**a At your first coaching session you notice that the motivation levels of the players is low. What types of methods and motivation might you use to improve the motivation and efforts of these performers?**

**b In your role as assistant coach you are asked to explain to the players how they should perform a warm-up and the value of warming up. What points should you make when giving such an explanation?**

(12 marks)

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## Section A mark scheme

### Question 1

a (i)

- Detection by chromoreceptors
- Nerve impulse sent to medulla/cardiac control centre
- Impulse sent via sympathetic system/nerve/cardiac accelerator nerve
- To SA node/SAN (3 marks)

(ii)

- Combines with haemoglobin
- Dissolves in plasma
- As bicarbonate/hydrogen carbonate (2 marks)

- b
- Increase in carbon dioxide/decrease in pH of the blood
  - Chemoreceptors detect this
  - Nerve impulses sent to respiratory centre/medulla
  - Phrenic/intercostal nerves
  - Deeper/faster breathing (3 marks)

- c
- Gas flows from area of high pressure to low pressure
  - Partial pressure/concentration of oxygen is high in the lungs
  - Low in the blood
  - Oxygen diffuses down the diffusion gradient in the blood
  - 30% dissolves in the plasma
  - 97% combines with haemoglobin (4 marks)

### Question 2

- a
- Attention — highlight the key areas of the skill/make it attractive to the learner/explain the function of the task
  - Retention — The performer must remember the information to reproduce it/break information into small chunks/repetition helps
  - Motor production — physically capable of performing the skill/within ability of performer
  - Motivation — performer's drive/desire/use of rewards/praise by coach (4 marks)
- b
- Make sure the learner understands the importance and relevance to the final performance/make it meaningful
  - Use of role model/significant other
  - Get someone of similar age/ability (self-efficacy) to demonstrate
  - Ensure that the audience can see and hear the demonstration well
  - Break down skill into components
  - Highlight the main aspects/cues of the demonstration on a few points, rather than the whole performance/make it simple/specific/short



## Questions and Answers



- Make the demonstration stand out/attractive
  - Allow time for mental rehearsal
  - Repeat the demonstration if necessary
  - Reinforce successful demonstrations
  - Model is accurate/clear/perfect
- (Do not credit age/gender/ability)

(4 marks)

### c Cognitive

- Use of extrinsic feedback since advice is needed
- Use of positive feedback to give encouragement and motivation
- Knowledge of results used as a starting point

### Associative

- At the associative stage — performer begins to monitor his/her own feedback/kinaesthesia and knowledge of performance
- Extrinsic feedback from coach — but more exact
- Intrinsic feedback can be used

### Autonomous

- The performer uses more knowledge of performance
- Able to detect own errors with kinaesthesia/intrinsic feedback
- Able to make corrections to own performance
- Can be extrinsic from a coach with technical/detailed information
- Can handle negative feedback

(4 marks)

## Question 3

### a (i)

Discrimination is the unfair/unequal treatment of a person, racial group or minority based on prejudice.

(1 mark)

### (ii)

A stereotype is a simplified/standardised image or view of an individual or group of people (often based on myth).

(1 mark)

### (iii)

A target group is a section of society that is targeted in an effort to increase the numbers participating in sport/recreation owing to relatively low levels of participation compared with their numbers in society.

(1 mark)

- b**
- Allow appealing kit to be worn
  - Provide a varied programme/give a choice of activities
  - Arrange trips/tours
  - Employ more female PE staff
  - Ensure PE has high status
  - Advertise/promote female sport
  - Provide single-sex activities
  - Provide extra-curricular opportunities (e.g. clubs/teams)

(4 marks)

## Questions and Answers



- c**
- Increase participation
  - Start/stay/succeed
  - Increase community sport provision
  - Make England an active nation (e.g. Get Active)
  - Support/deliver the government's sporting targets/objectives (2 marks)
- d**
- Club membership fees/entrance fees
  - Kit/equipment costs
  - Coaching expenses
  - Lack of time
  - Lack of confidence
  - Childcare costs
  - Lower levels of fitness among lower social classes (3 marks)



## Section B mark scheme

### Question 4

- a**
- Extrinsic feedback/motivation would be best to use
  - Extrinsic feedback/motivation is derived from an external source, which a coach could provide
  - e.g. awarding badges/trophies
  - Extrinsic motivation could be offered as praise/encouragement/positive feedback to members of the team
  - The coach could set targets/goals
  - And assess these goals after a match
  - Each training session should be varied/include fun activities
  - The coach could blame 'external factors' (e.g. the weather) if things don't go well during a training session
  - Intrinsic feedback/motivation of performers may improve as a result
- b** How to warm up:
- There are generally three stages to a warm up
  - Stage 1 is raising the pulse to deliver oxygen to the working muscles
  - Stage 2 is stretching/flexibility exercises, especially of muscles/joints used in training sessions
  - Stage 3 is performance of movement patterns that are to be carried out (e.g. dribbling)

Warming up has a number of physiological benefits including:

- The release of adrenaline increases heart rate and dilates the capillaries
- The vasomotor centre ensures that vasodilatation occurs, so that more blood flows (due to the increase in cardiac output) to the working muscles
- This allows more oxygen to be delivered to the skeletal muscles
- Muscle temperature increases
- This enables oxygen to dissociate more easily from haemoglobin and allows for an increase in enzyme activity, making energy readily available
- An increase in the speed of nerve impulse conduction allows us to be more alert/has psychological benefits
- Muscle fibres become more elastic through the increase in muscle temperature
- This leads to an increase in the speed and force of contraction
- Efficient movement at joints occurs through an increased production of synovial fluid
- OBLA (onset of blood lactic acid accumulation) decreases
- A reduction in muscle viscosity improves the coordination between antagonistic pairs and this increases the speed and strength of muscle contractions
- An increase in enzyme activity in the warmer muscle fibres increases the speed and strength of muscle contractions

# Questions and Answers



<b>Band range</b>	<b>Band description</b>
9–12	<ul style="list-style-type: none"><li>● Addresses all parts of the question (i.e. types and methods of motivation, three stages of a warm up, benefits of a warming up both physically and psychologically)</li><li>● Has accessed at least ten points from the mark scheme (five per topic area)</li><li>● Good use of examples to support answer</li><li>● Few errors in spelling, punctuation and grammar</li></ul>
6–8	<ul style="list-style-type: none"><li>● Attempts all parts of the question</li><li>● Has accessed at least 7–9 points from the mark scheme (minimum four per topic)</li><li>● Some examples to support answer</li><li>● Some errors in spelling, punctuation and grammar</li></ul>
1–5	<ul style="list-style-type: none"><li>● Attempts at least one part of the question</li><li>● Has accessed at least three points from the mark scheme</li><li>● Major errors in spelling, punctuation and grammar at lower end of the band</li></ul>



## Frequently asked questions

### Applied exercise physiology

There are two compulsory questions on applied exercise physiology in Unit 1, each worth 12 marks. Each question is broken down into parts covering the different topics of the applied exercise physiology specification. The most frequently asked questions for these topic areas are as follows.

#### Joint movement analysis

There is nearly always a question on this topic. The most popular questions involve the candidate being asked to name the movement occurring at a joint and the agonist muscle.

Questions could be asked on the following movements:

- the shoulder and elbow action in push-ups, overarm throwing and forehand racket strokes
- the hip, knee and ankle action in running, kicking, jumping and squats

Occasionally these questions ask for the type of contraction being performed. Remember, eccentric contractions only occur on the downward phase of a movement (squat or push-up). Otherwise, if there is movement a concentric contraction occurs.

#### The heart

Questions on stroke volume and cardiac output are always popular. Make sure you are aware of the factors affecting stroke volume:

- venous return
- the elasticity of cardiac fibres can cause a greater force of contraction (Starling's law)
- the greater the contractility of the cardiac tissue (myocardium), the greater the force of contraction
- increase in the ejection fraction

Do not be misled by the following question:

**What are the effects of a period of training on resting stroke volume and cardiac output?**

(2 marks)

Stroke volume increases ✓ but resting cardiac output remains the same ✓. It is only maximum cardiac output that increases.

#### Vascular system

The most popular question on blood flow concerns the redistribution of blood (vascular shunt). Make sure you mention chemoreceptors detecting an increase in carbon dioxide and explain vasoconstriction, vasodilation and precapillary sphincters.

#### Respiration

The most frequently asked questions on this topic area are the identification of lung volumes and an explanation of oxyhaemoglobin dissociation. The latter can take the form of labelling a graph or explaining why the oxyhaemoglobin curve shifts to the right.

# Questions and Answers



## Health, exercise and fitness

This is a popular and straightforward topic area. Questions appear on almost every paper, most frequently on the following areas:

- definition of a fitness component
- description of a test for a particular component of fitness, e.g. for agility, the Illinois agility run, or for flexibility, the sit-and-reach test
- identification of a specific fitness component for a particular sports performer
- explanation of validity and reliability

## Nutrition

This is a new topic area and questions appear to be based around the diets of specific sports performers — for example, an endurance athlete will have a different diet from a weightlifter's. Make sure you can describe the diets of particular performers and highlight the reasons why certain food types need to be consumed.

## Skill acquisition

There are two compulsory questions from the skill acquisition section, each worth 12 marks. The questions are based on sporting situations. They are stepped and structured, the difficulty of the questions increasing with each step.

The following topics are the basis for the most frequently asked questions.

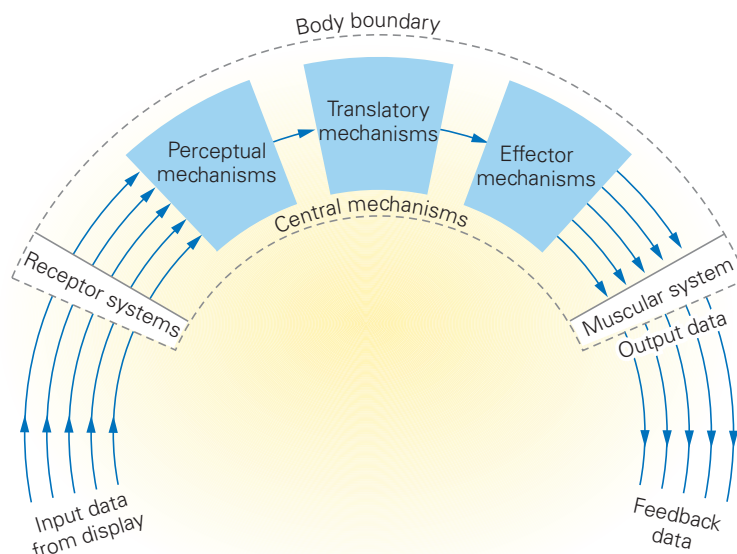
## Information processing

Questions can be based on a diagram of information processing, such as the Welford and Whiting models. You might be asked to study the diagram and then name and explain various features from it. You need a thorough knowledge of all aspects of information processing — know your definitions of each part of the models and make sure you can relate the main features of each part to a sporting example. For example:

**Physical performance is achieved by using information to control body systems.**

**Figure 1 shows a typical information processing model.**

Figure 1



# Questions and Answers



- a Use Figure 1 to explain the functions of each of the following stages:**
- (i) perceptual mechanism** (3 marks)
  - (ii) translatory mechanism** (3 marks)
- b Selective attention is an important part of the information processing system. Use Figure 1 to identify where selective attention occurs and explain how it aids performance.** (4 marks)

## Answers

### a (i)

Perceptual mechanism:

- Information is received from short-term sensory store (STSS)
- By the senses
- Discriminates information/selective attention/filters information
- Coding of important information/interpretation of data/stimulus identification/making sense of the information/realising the importance
- Pass information into translatory mechanism

### (ii)

Translatory mechanism

- Developed/adapts to information
  - Compares information with long-term memory/past experience
  - Decision-making process
  - Selects the appropriate motor programme
- b**
- Perceptual mechanism/STSS and short-term memory
  - Responsible for selecting relevant information
  - From irrelevant information
  - Allows to focus/concentrate on relevant information/allows to keep information in the STM for longer/prevents it from fading
  - To prevent information overload/equivalent
  - Short-term memory can hold about seven items/limited capacity

## Theories of learning

Questions on this topic usually require you to explain the main features of each theory of learning and to relate those features to a specific situation. You should learn each theory thoroughly and be able to use the example given in the question to show how the theory is put into practice. The phases of learning and how each phase relates to a different stage of performance ranging from novice to expert are a popular question. The types of feedback and practice used in each phase should be learned so that you can differentiate between the coaching for a novice and that for an expert. The use of reinforcement is a common exam question and you should be aware of the differences between positive reinforcement, negative reinforcement and punishment. For example:

- a Schmidt's schema theory is based on performers using four sources of information to modify their motor programmes. List these four sources of information.** (4 marks)
- b Explain how a coach can enable a schema to develop.** (5 marks)
- c Name the three stages of learning and describe the characteristics of the level of performance associated with each stage.** (3 marks)
- d What strategies can a coach use to help a javelin thrower progress in (i) the first and (ii) the final stage of learning.** (6 marks)

# Questions and Answers



## Answers

- a**
- Initial conditions/environmental conditions
  - Response specifications
  - Sensory consequences/kinaesthesia/knowledge of performance
  - Response outcomes/knowledge of results
- b**
- Varied practice conditions/equivalent
  - Plenty of information
  - Practice relevant to game/conditioned games
  - Frequent feedback (continuous and terminal)
  - Include transferable information from other sports
  - Slow-motion practice/video analysis/visual aids/guidance
  - Ensure players are aware of transfer of training possibilities
- c**
- Cognitive phase — understanding what needs to be done and attempting skill/lots of errors/thinking about what he/she is doing
  - Associative phase —refining the movement so that it is performed more consistently and effectively/lots of practice
  - Autonomous — automatic/performing without thinking/can concentrate on other aspects of skills/high speed and efficiency/few errors
- d (i)**
- Cognitive
- Ensure safety
  - Foam javelins/tennis balls/overarm action
  - Enthusiastic/initial success guaranteed
  - Focus/concentrate on key points/part learning
  - Instructions clear/simple and concise
  - Demonstrations by fellow pupils/coach/visual aids
  - Instructions/verbal guidance
  - Manual guidance
  - Practice — trial and error
  - Create a mental image/picture
  - Goals/rewards/praise/positive reinforcement
  - Feedback/simple/knowledge of results/terminal/positive
- (ii)**
- Autonomous
- Get the performer to concentrate on kinaesthesia/knowledge of performance
  - Encourage performer to self-evaluate performance/error detection
  - Focus on stress management/mental practice/psychological aspects
  - May be more motivational
  - Concentrate on style and form
  - Set more challenging targets/distances
  - Frequent practice
  - Feedback is critical/technical/concurrent/negative
  - Video analysis



# Questions and Answers



## Types of practice

Questions on the types of practice, teaching and guidance usually call for some kind of comparison — for example, advantages and disadvantages of one type of teaching or practice, or how you would use a type of guidance with a novice and an expert. The other theme on this topic is to ask under what circumstances you would use each type of teaching, guidance and practice. It is essential therefore that you learn the main points of each type of practice and are able to say when you would use them. Make a list of the advantages and disadvantages of each type, so that you can quote them in the exam. For example:

- a Swimming may be taught using either the whole method or part method of practice. What are the advantages of using the whole method and the part method?** (7 marks)
- b In schools, gymnastics can be taught as educational gymnastics, which corresponds to a problem-solving teaching style. What are the advantages of this approach when teaching gymnastics?** (3 marks)
- c On occasions, a teacher may need to adopt a command style of teaching. In what situations would this be necessary?** (2 marks)
- d Identify four factors that a teacher should consider when selecting an appropriate teaching style.** (4 marks)

## Answers

### a Whole method

- Develops a feel for the movement
- Builds up a cognitive picture/mental picture/knows what to do
- Links the elements of the skill/correct order of sequence
- More meaningful from the start
- Gives student an aim

### Part method

- Reduced demands for complex skills/less information to process
- Allows confidence and understanding to grow quickly
- Helps with motivation
- Useful in dangerous situations — swimming
- Can reduce fatigue in physically demanding skills
- Allows the opportunity to focus on particular elements/work on one part at a time
- Provides stages of success
- Low organisation skills can be broken down easily

- b**
- Responsible for one's own learning/more likely to remember
  - Improves self-confidence/motivation
  - Encourages creativity/self-expression
  - Aids self-fulfilment
  - Allows for group interaction and therefore promotes cohesion
  - Good for high-level performer
  - Helps understanding
- c**
- Working with beginners/young children/inexperienced
  - Working with large/unruly groups
  - Dangerous situations
  - Limited time situations

# Questions and Answers



- d ● Task analysis (allow examples)
- Demands placed on performer
  - Classification/complexity/organisation/nature/type of skill
  - Danger
  - Distribution of practice
  - Learner — individual/group characteristics (with examples)
  - Students' age
  - Students' level of skill/ability/fitness/knowledge/attitude/experience/behaviour
  - Situation — environmental factors (with examples)
  - Resources/staffing/size of group

## Opportunities for participation

Two compulsory questions will be set as structured tasks — that is, they will have a number of parts to them. Each of these questions is worth 12 marks in total. Between them, the questions will be drawn from across the different sections of the 'Opportunities for Participation' part of the specification.

Popular questions from Section 1 link to the key characteristics of various concepts. For example:

**Identify three key characteristics of sport.** (3 marks)

**Using a practical example, state three features of outdoor and adventurous activities.** (3 marks)

In addition to being able to identify key features or characteristics of various concepts, you should make sure you can list and explain the key functions and benefits of such concepts. For example:

**What are the main values of physical education?** (3 marks)

**List three functions of physical recreation for an individual.** (3 marks)

More difficult questions ask for similarities or differences between various concepts, such as physical recreation and sport.

Finally in Section 1, the value of 'active leisure' to individuals and to society in general is a popular question topic (e.g. to improve fitness/social control/integration of a community).

Section 2 is the smallest section of the specification. The most frequently asked questions are linked to provision for active leisure across the three sectors, namely, public, private and voluntary. For example:

**List three characteristics of voluntary sector sports provision.** (3 marks)

**What are the advantages and disadvantages of private-sector active-leisure provision?** (3 marks)

The only other type of question to be set from this section links to the concept of 'best value' and why it has been introduced in relation to public-sector leisure provision.

Section 3 contains a variety of possible topic areas linked to organisations and initiatives designed to raise levels of participation in school-aged children. For example:

**Explain how the Youth Sport Trust is trying to increase participation in school-aged children.** (4 marks)

**What initiatives are being implemented to improve a pupil's PE experience?** (4 marks)

## Questions and Answers



The historical development of PE is a popular source of questions:

**What were the objectives of the Model Course?** (2 marks)

**Compare the early syllabus developments in PT (i.e. 1904) with the last syllabus of PT (i.e. 1933) in relation to content.** (4 marks)

Section 4 requires knowledge of a range of terms contained in the specification. For example:

**Define the term discrimination.** (1 mark)

**Define the term stereotyping.** (1 mark)

It also requires you to be able to identify possible barriers to participation for various target groups:

**List three barriers to participation facing ethnic minority groups in modern-day society.** (3 marks)

**How can participation in PE among Key Stage 4 girls (i.e. 14–16-year-olds) be increased?** (4 marks)

**Define the term 'inclusiveness' and outline the possible advantages and disadvantages of an inclusive school PE programme.** (5 marks)



## Sample unit test

This sample unit test contains some example examination questions, with answers and examiner comments. The aims are:

- to explain how marks are awarded
- to show the sorts of questions that might be asked
- to help you test your own understanding by answering the questions yourself before looking at the answers and comments
- to help with your learning and revision by showing you what you need to know

The Unit 1 exam is a 2-hour written exam. It is worth 60% of the total AS mark and 30% of the total A-level mark. It comprises two sections. Section A contains six structured questions, each worth 12 marks. There are two questions from each of the three areas of the specification — Applied Exercise Physiology, Skill Acquisition and Opportunities for Participation. Section B contains one question, also worth 12 marks. The first part of this question relates to applied exercise physiology in practical situations. The second part is about skill acquisition in practical situations.

All seven questions must be answered.



## Section A

Answer all questions.

**1 Regular participation in physical activity leads to changes in ventilation rate and heart rate, and players will experience changes to their cardiovascular systems.**

**A Heart rate increases *prior to* and *during* exercise and reduces *after* exercise.**

**Explain how these changes in heart rate take place.**

(4 marks)

**B During exercise, the stroke volume of a trained performer will increase.**

**How is this increase in stroke volume during exercise achieved?**

(3 marks)

**C After a period of aerobic training, some performers may experience bradycardia and a condition called athlete's heart.**

**(i) Explain the terms bradycardia and athlete's heart.**

(2 marks)

**(ii) What physiological factors are responsible for these changes?**

(3 marks)

**2 To produce a successful kick, a games player has to use his muscles and joints effectively and demonstrate a high level of skill.**

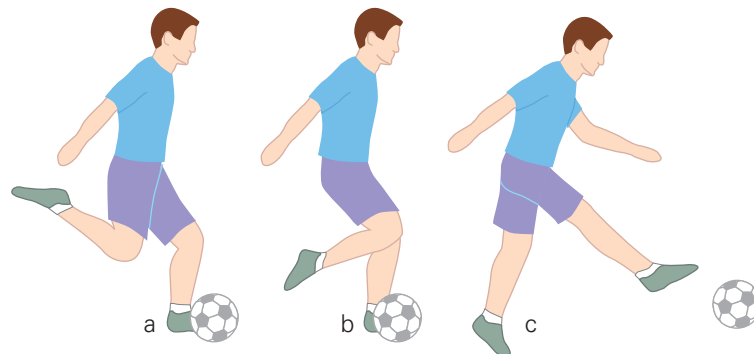


Figure 1

**A Copy and complete the following table and identify the joint action and the main agonist involved at the ankle, knee and hip of the right (kicking) leg/foot when moving from position a to position b (Figure 1).**

(6 marks)

Kicking phase	Joint action	Main agonist
Ankle		
Knee		
Hip		

**B Name and sketch the lever system operating at the right ankle joint during the kick.**

(3 marks)

**C During a game of football, the blood flow of the player is redirected to the active muscles. Explain how this is achieved.**

(3 marks)

## Questions and Answers



**3** In sport, participants usually have to learn and perform skills.

- A** What do you understand by the terms learning and performance when related to sport? (2 marks)
- B** What is the difference between positive and negative transfer in terms of skill learning? (4 marks)
- C** Figure 2 shows the performance curve of a beginner learning to shoot baskets in a massed practice session. Identify phase c of the curve and give reasons for its occurrence. (4 marks)

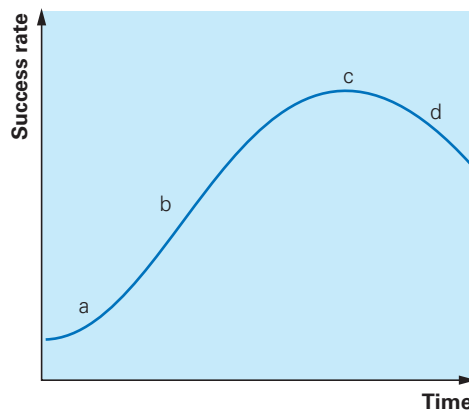


Figure 2

- D** Describe two ways in which a coach could overcome the problems created by phase c. (2 marks)
- 4** For effective learning to take place in sport, participants need to remember important cues and movement patterns.
- A** What are the characteristics and functions of both the long-term and short-term memory? (6 marks)
- B** How could a coach ensure that information is stored in the participant's long-term memory? (4 marks)
- C** Effective learning can be enhanced by using feedback. Explain what you understand by the types of feedback referred to as knowledge of results and knowledge of performance. (2 marks)
- 5** In modern-day society, people can choose from a wide variety of activities to occupy their leisure time.
- A** How does physical recreation differ from other types of leisure pursuit? (2 marks)
- B** Explain the importance of physical recreation to individuals and to society. (4 marks)
- C** Physical education in schools has an important function to prepare children to spend their leisure time actively. How might PE programmes prepare children for active leisure? (3 marks)
- D** Facilities for physical recreation, as well as sport, are provided by a combination of the public, private and voluntary sectors. What is the main objective of each sector? (3 marks)

## Questions and Answers



- 6 A** A 'sports development pyramid' has been developed to illustrate the developmental stages of involvement in physical activity/sport. Explain the terms foundation and participation found at the base of the pyramid. (2 marks)
- B** Opportunities to participate in sport can be affected by racism. With reference to sport/physical activity, explain the term racial discrimination and comment on its legality. (3 marks)
- C** Describe three different ways in which individuals might experience racial discrimination when participating in sport. (3 marks)
- D** A number of organisations such as Sport England are involved in providing sport and recreational activities for target groups in the UK. State the objectives of Sport England and give some initiatives it has developed to meet these objectives. (4 marks)



## Section B

Answer this question.

- 7 A** Identify and define three types of fitness that are important for a hockey player, *and* offer some nutritional advice to hockey players that will help them to adopt a balanced diet suitable for their sport.
- B** You have been asked by a friend to assist in the coaching of a local hockey team which trains on a regular basis. At your first coaching session you notice that the motivation level of the players is low. What types of motivation and what methods of motivation could you use to improve the efforts of these players?

(12 marks)





## Section A answers

### Question 1

**A** Prior to exercise:

- The release of adrenaline increases heart rate (sub max. 1 mark)

During exercise:

- An increase in carbon dioxide/ $\text{CO}_2$
- Drop in pH/increase in acidity
- Chemoreceptors detect changes
- Impulse sent to the medulla/cardiac centre
- SA node receives an impulse and increases heart rate (sub max. 2 marks)

After exercise:

- Blood pressure changes
  - Baroreceptors detect the change
  - Heart rate decreases due to the parasympathetic nervous system (sub max. 2 marks)
- (4 marks)

**e** The increase in heart rate before exercise is due to hormonal changes. An explanation of neural control of the heart is required to explain the changes in heart rate during and after exercise.

- B**
- Increase in venous return
  - This will increase the stretch of the cardiac muscle
  - Therefore the force of contraction increases/or equivalent
  - This is Starling's law
  - At rest the ventricles only pump out approximately 60% of blood/or equivalent
  - During exercise this ejection fraction is higher
  - The end systolic volume is lower during exercise (3 marks)

**e** This question is worth 3 marks. It requires you to demonstrate an understanding of the factors affecting stroke volume. The question does not specify the number of points needed, so give four points to try to ensure full marks.

**C (i)**

- Bradycardia — a reduction in *resting* heart rate
- Athlete's heart — hypertrophy/increase in the size of the heart chambers (2 marks)

**(ii)**

- Increase in stroke volume
- Maximum cardiac output increases
- Hypertrophy of the myocardium/heart muscle
- Increase in number of mitochondria
- Capillarisation of the heart increases
- Heart beats more strongly/increased contractility

## Questions and Answers



- Decrease in firing of the SA node
- Increase in parasympathetic stimulation (3 marks)

**e** When you exercise regularly, physiological adaptations take place in the body, i.e. it changes. Questions are often asked on these changes, so make sure you know them.

### Question 2

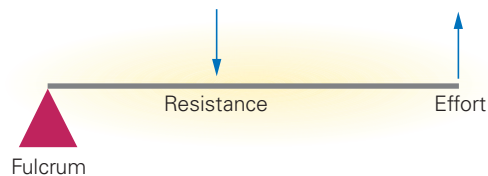
**A**

Kicking phase	Joint action	Main agonist
Ankle	Plantarflexion	Gastrocnemius
Knee	Extension	Quadriceps
Hip	Flexion	Iliopsoas

(6 marks)

**e** Questions on movement analysis are very popular and usually require one-word answers.

- B**
- Second-order lever
  - Correct labels — fulcrum/pivot, resistance/load, effort/force
  - Correct order — fulcrum next to the resistance



(3 marks)

**e** There are three classifications of levers. If the ankle joint is asked for, it is a second-order lever. *Most* of the other levers found in the body are third order.

- C**
- Increase in carbon dioxide/drop in pH/increase in lactic acid
  - Detected by chemoreceptors
  - Impulse sent to the medulla/vasomotor centre
  - Sympathetic nerve impulse to the blood vessels
  - Production of adrenaline/noradrenaline
  - Pre-capillary sphincters open in the capillaries surrounding the muscles
  - Pre-capillary sphincters closed in the capillaries surrounding the non-essential organs
  - Vasoconstriction in blood vessels supplying non-essential organs
  - Vasodilation in blood vessels supplying muscles (3 marks)

**e** Questions on the redirection of blood flow require an explanation of the vascular shunt mechanism. This starts with the receptors, then the medulla oblongata and finally a description of vasodilation, vasoconstriction and the value of pre-capillary sphincters is needed.

# Questions and Answers



## Question 3

- A**
- Learning is a permanent change in behaviour.
  - Performance is a physical demonstration of a movement pattern that can fluctuate according to many variables. (2 marks)

**e** In this question, nothing more is needed than learned definitions. Make sure you have revised.

- B** Positive transfer is when the learning and performance of one skill is helped by the learning and performance of another ✓. Negative transfer has the opposite effect, that is, the learning and performance of one skill can be hindered by the learning and performance of another ✓. Positive transfer tends to occur when the skills have a similar shape and form, such as the similar overarm action when serving in tennis and volleyball ✓. (4 marks)

**e** This question asks you to make some comparative statements. You need to highlight the key points of positive transfer and then show how they differ from the key points of negative transfer.

- C** Phase c is known as a plateau in performance. (1 mark)
- The plateau may occur because the performer has become tired and is suffering from fatigue.
  - The performer may have become bored from doing the same task, and motivation might be lost.
  - It may be that the performer has reached the limit of his/her ability and is unable to do any better.
  - Perhaps the coaching has been poor and the coach and/or the player may have failed to set targets at the appropriate level.
  - The technique of the performer may be poor. (sub max. 3 marks)

(4 marks)

**e** In this question, you are asked to do two things, so make sure you answer both parts of the question because the mark scheme will be divided. 1 mark is given for the identification of phase c and 3 marks for stating why phase c might occur. If you give six reasons for the occurrence of phase c, you will still get a maximum of 3 marks.

- D**
- To avoid fatigue, the performer should be given a rest interval to break up the practice session and allow time to recuperate.
  - To prevent boredom and loss of motivation, the coach could add variety to practice.
  - The coach could set targets for the performer to aim for.
  - Rewards and incentives could be used to increase motivation.
  - Alternative coaching methods could be used.
  - Mental rehearsal could be used to improve technique. (2 marks)

## Questions and Answers



- e** In this question, it is a good idea to use the causes of the plateau identified in the previous part and give a countermeasure to help overcome them. When a question asks you to name two features, usually the examiner will only award marks for the first two answers that you write, so make sure the first things you say are to the point.

### Question 4

**A** The short-term memory has a limited capacity ✓. It can deal with between five and nine items of information. It has a short time span of around 30 seconds ✓. It is often called the working memory ✓ because it has a number of functions. These functions include receiving information from the short-term sensory store ✓, receiving feedback, passing on and comparing information to and from the long-term memory and initiating motor programmes ✓ by sending messages to the working muscles. The long-term memory has a large capacity ✓ and can store information over a lifetime ✓. It stores motor programmes ✓ and mental images of skills. It can both receive and pass on information to the short-term memory ✓. (6 marks)

- e** This longer question asks you to recall factual information and apply it to both the features and functions of the memory system. Revision and recall are important and it is a good idea to give as much information as you can about the memory systems. Don't be afraid to write as much as you know; you will not be penalised for anything that is not worth a mark, but you will get credit for anything that is correct.

**B** To store information in the long-term memory, the coach could make the performer practise ✓ the task frequently to ensure over-learning and then give feedback ✓ to the performer to correct any errors. Positive reinforcement ✓ helps to store information for future use and the coach could make the activity fun ✓ so that the player enjoys the coaching session and is more likely to learn from it. Mental rehearsal ✓, going over the performance in the mind, will help to store mental images of the task and the coach may also try to associate ✓ the new information with something that the performer already knows to trigger the correct actions. Breaking the information given out during practice into smaller 'chunks' ✓ will make it easier to remember and the coach should always ensure that information given is relevant and meaningful ✓ to the player. (4 marks)

- e** This question asks you to recall methods used to store information in the memory and then relate these methods to the context of sports coaching. You can write as much information as you can to make sure all the key points are covered. It is always a good idea to give more points than there are marks available.

**C** Knowledge of results can be given after the performance and includes information about success or failure or the consequences of actions. Did the pass reach its target?

Knowledge of performance adds to the results of that performance and looks at why the pass reached its target. It concentrates on improving technique. (2 marks)

## Questions and Answers



- e** This question attempts to link with the memory theme (feedback can be used to help store information). It asks you to be specific in the detail that you can recall about feedback. Definitions of the two types of feedback are required and you will know these definitions if you have learnt them.

### Question 5

**A** Physical recreation involves exertion/physical activity, whereas other leisure pursuits are sedentary/inactive (e.g. playing computer games). (2 marks)

- e** This part of the question requires an explanation of how physical recreation as active leisure differs from other leisure pursuits, which may be inactive.

**B** Individual importance of recreation

- health and fitness benefits to the individual
- stress relief/relaxation/enjoyment
- encourages the individual to develop social skills
- provides a challenge/sense of achievement (sub max. 2 marks)

Social importance of recreation

- decrease strain on the NHS/decrease the economic burden caused by ill health
  - can be a focus for the development of community spirit
  - decrease in antisocial behaviour/social control (sub max. 2 marks)
- (4 marks)

- e** In this type of question, it is important to make a clear distinction between the parts of a question when two different things are asked for. Sometimes examiners are instructed 'no distinction, no marks'.

**C** ● Active leisure is being active in your free time.

Schools can:

- show the benefits of physical activity (e.g. health and fitness)
- develop sport-specific skills
- increase the number of activities available to experience in the PE programme (increase breadth)
- develop school–club links/taster activities at clubs and/or leisure centres/increase publicity/use of role models (3 marks)

- e** Try to state valid practical methods that schools could use to increase pupils' participation in active leisure. At AS, points linking to increased fun/enjoyment are too vague.

## Questions and Answers



- D ● Private — aim is to make a profit
- Public — concerned with social needs/equal opportunities
- Voluntary — concerned with developing interest in joining a sports club to increase membership (3 marks)

e Make it clear which sector you are talking about and link it to a relevant objective.

### Question 6

A Foundation level — the first introduction to an activity, learning basic motor skills at primary school

Participation level — more regular involvement in recreational activities, with participation as opposed to winning being the main motive for taking part (2 marks)

e For this 2-mark introductory type of question, you need to give clear, succinct answers that leave the examiner in no doubt that you fully understand the terms.

B Racial discrimination means

- the prevention of/interference with a person's participation in sport/recreation
- based on the negative stereotypes held by others/the prejudices of others
- based on the ethnic origin/racial background of an individual (2 marks)

Comment on its legality:

- All forms of racial discrimination are illegal/it is a criminal offence (1 mark)

e To earn full marks you need to address both parts of the question. Explain the term racial discrimination *and* comment on its legality. If you only answer part of the question, you will limit the marks you can score.

- C ● Restricted membership to a club/team
- Racial abuse (from the crowd or opponents)
- Not selected for a team
- Less financial support (e.g. sponsorship)
- Encouraged into/away from certain activities by coaches or teachers (3 marks)

e Try to ensure that the three potential discriminatory barriers to participation for ethnic minority groups that you give are sufficiently different to earn full marks.

D Sport England objectives

- Provide a strategic lead for sport in England
- Focus investment in recreation/sport, particularly for community participation
- Provide advice and support to its partners (e.g. national governing bodies of sport)
- Increase participation rates (Start)
- Retain participants in clubs (Stay)
- Increase participation levels so that England becomes number one in the world in terms of participation by 2020 (Succeed) (2 marks)

## Questions and Answers



Sport England initiatives:

- Sports colleges/SSCOs
- Sportsmark/Activemark/Sports Partnership Mark
- Active Sports Programme/Get Active
- Sport Action Zones
- PESSCL
- Sporting Equals

(2 marks)

- e** This question has two parts to it and both parts need to be answered for maximum marks. It is important to distinguish clearly between the two parts, as illustrated.



## Section B answers

- e** A banded mark scheme is used in the allocation of marks for this section. Once the question has been marked, the examiner will look at the answer and place it into one of the bands given in the table at the end of this question. Remember, the key to success is factual content.

Band range	Band descriptors
10–12	<ul style="list-style-type: none"> <li>● Demonstrates a wide range and depth of knowledge</li> <li>● Has accessed at least 10 points from the mark scheme (a minimum of 5 points for a and 5 for b)</li> <li>● Uses clear, concise argument</li> <li>● Examples to support answer</li> <li>● Few errors in spelling, punctuation and grammar</li> <li>● Correct use of technical language</li> </ul>
7–9	<ul style="list-style-type: none"> <li>● Demonstrates a range and depth of knowledge</li> <li>● Has accessed at least 7–9 points from the mark scheme (a minimum of 3 points per part)</li> <li>● Attempts a clear, concise argument</li> <li>● Examples to support answer</li> <li>● Few errors in spelling, punctuation and grammar</li> <li>● Correct use of technical language most of the time</li> </ul>
4–6	<ul style="list-style-type: none"> <li>● Addresses the question but lacks depth and knowledge</li> <li>● Has accessed at least 4–6 points from the mark scheme</li> <li>● Limited attempt to develop any argument or discussion</li> <li>● Few examples to support answer</li> <li>● Errors in spelling, punctuation and grammar</li> <li>● Limited use of technical language</li> </ul>
1–3	<ul style="list-style-type: none"> <li>● Addresses the question with limited success</li> <li>● Has accessed at least 3 points from the mark scheme</li> <li>● Few examples to support answer</li> <li>● Major errors in spelling, punctuation and grammar</li> <li>● Lacks use of technical language</li> </ul>





### Question 7

- A** For the first part of Question 7a, you need to list three components of fitness and give a definition for each. Any three from:
- Agility — the ability to change direction quickly
  - Speed — how fast a specific distance can be covered/the ability to put body parts into motion quickly
  - Flexibility — the range of movement around a joint
  - Coordination — accuracy of limb movement
  - Power — a combination of strength and speed/work performed per unit of time

- e** If the question asks you to define *three* types of fitness, for example, give just three answers as the examiner will only mark the first three answers given.

For the second part of Question 7a, you need to give the following information:

A balanced diet for a hockey player would consist of 10–15% protein, 20–25% fat and 60–75% carbohydrate ✓. A high percentage of carbohydrates should be consumed because they are a high-energy food ✓. Fats provide energy for low-intensity exercise ✓ and proteins are used for tissue growth/enzymes/hormones/haemoglobin ✓. Vitamins enable muscle and nerve functioning/tissue growth/release of energy from foods. Minerals improve bodily functions/calcium for strong bones/iron helps form haemoglobin/facilitate the transmission of nerve impulses for effective muscle contraction ✓. Fibre can slow the breakdown of food in the body, which results in a slower, more sustained release of energy ✓. Water carries nutrients to cells in the body/removes waste products/helps to control body temperature ✓ and sports drinks such as Lucozade can boost glucose levels before competition ✓.

- e** Make sure you express your work clearly and concisely but at the same time demonstrate a range and depth of knowledge. Spelling, punctuation and grammar are important, as is the use of technical language.

- B** Types of motivation available to coaches include both extrinsic and intrinsic methods. Extrinsic motivation is derived from an external source ✓ such as a coach or a team-mate. It can include the awarding of trophies, badges and certificates, such as a player of the match trophy. Such physical rewards are called tangible rewards ✓.

Extrinsic motivation can also be offered in the form of praise and encouragement, and these forms of motivation are known as intangible rewards ✓. To apply these types of motivation to the hockey team, the coach could offer reinforcement to the player when both training and playing. After the training session, the coach could offer positive feedback ✓ to members of the team for the next training session. The coach could set targets or goals ✓ and assess these goals after the team has played a match. Each training session should be varied ✓ and include an element of fun, such as some small-sided games.

## Questions and Answers



If things don't go well during the training session, the coach could blame external factors such as the weather ✓. If things go well and the players reach their targets, the coach should attribute such success internally ✓, telling the players that they have put a lot of effort into that session. The coach should also make sure that there is a tangible reward available, perhaps a trophy ✓ for the player who trains the hardest during a monthly period.

- e This long and demanding question is designed to test detailed knowledge of theoretical concepts. To gain maximum marks, you should make sure that you use correct spelling, punctuation and grammar, that you use technical language, and that you can identify seven or eight key points. The technical language can be derived by learning key terms. In this instance, the different types of motivation and the key points are derived from your knowledge of the methods used by coaches to motivate their players.