


OCR

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 a sample unit test with examiner comments and a mark scheme to check your answers against. These examples from across the specification will give you an idea of the kinds of questions you will be asked in the Unit G451 exam paper and will hopefully help you with your revision.

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Worksheet

This worksheet comprises three questions, one from each section of the specification content for Unit G451. Answer all parts of all three questions.

Mark allocations are shown in brackets. Questions that require a longer answer, and which are assessed for quality of written communication, are each worth 10 marks. They are marked according to a 'levels' system, an example of which is outlined below.

Level 3 (8–10 marks)

- addresses all aspects of the question, illustrating a wide range of knowledge
- good use of examples to illustrate points made
- clearly expressed points/arguments
- accurate technical and specialist vocabulary is used throughout
- excellent spelling, punctuation and grammar

Level 2 (5–7 marks)

- addresses most aspects of the question, demonstrating some knowledge
- some examples to develop/support answer
- technical and specialist vocabulary is used with some accuracy
- few errors in spelling, punctuation and grammar

Level 1 (0–4 marks)

- addresses some aspects of the question
- basic knowledge but little understanding evident
- few, if any, examples used
- limited technical and specialist vocabulary
- written communication lacks fluency and has some errors in spelling, punctuation and grammar



Section A Anatomy and physiology

Question 1

- a The photograph shows a netball player performing a shot. Apply your knowledge of anatomy and physiology to complete the joint movement analysis table for executing the shot.



Simon Marshall

Joint	Joint type	Articulating bones	Movement	Agonist	Antagonist	Type of contraction
Elbow						

(6 marks)

- b Identify the predominant muscle fibre type during a 100 m sprint and give two structural and two functional characteristics of this type of fibre.

(5 marks)

Fibre type

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Structural characteristics

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Functional characteristics

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c After oxygen is released at the tissues, the blood returns to the heart. This is called venous return. Identify three mechanisms that aid venous return during exercise and give two reasons why a good venous return helps an endurance performer. (5 marks)

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d Describe how oxygen and carbon dioxide are transported in the blood. (4 marks)

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Section B Acquiring movement skills

Question 2

You are watching a game of cricket and the batsman has just played an excellent shot. He is a skilful player.

a What are the characteristics of a skilful performance in sport? (4 marks)

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b The skilful shot could be classified according to certain criteria. Use the *pacing, muscular involvement* and *continuity* criteria to classify a cricket shot. Justify your decisions in each case. (6 marks)

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c The batsman may have used his memory to help decide which shot to play. What are the characteristics and functions of the long-term and short-term memories? (6 marks)

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Section C Sociocultural studies relating to participation in physical activity

Question 3

a A key characteristic of sport is competitiveness. Give three other characteristics of sport. (3 marks)

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b Gloucestershire cheese rolling is one example of a surviving ethnic sport that still occurs on an annual basis in a rural location. Give three other characteristics of surviving ethnic sports in the UK. (3 marks)

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c Explain why people of low social class on low incomes are less likely to participate in active leisure than people of higher social class and wealth. (4 marks)

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Questions and Answers



d Give reasons to account for the domination of male sports in media coverage in the UK.

(4 marks)

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e 'Performance-enhancing drugs are just like any other training aid available, so sports performers should be allowed to use them if they wish to.'

Outline the arguments for and against this statement.

(6 marks)

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Mark scheme

Question 1

1 a 1 mark per correct answer

Joint	Joint type	Articulating bones	Movement	Agonist	Antagonist	Type of contraction
Elbow	Hinge	Humerus, radius and ulna	Extension	Triceps brachii	Biceps brachii	Concentric

b 1 mark for:

Fibre type: fast glycolytic/type IIb

1 mark per point, sub-max. 2 for structural characteristics:

- more fibres per motor neurone
- fewer myoglobin
- fewer mitochondria
- more glycogen stores
- larger in diameter

1 mark per point, sub-max. 2 for functional characteristics:

- low aerobic capacity/high anaerobic capacity
- fast contractile speed
- low fatigue resistance
- high motor unit strength

c 1 mark for each mechanism

- valves
- skeletal muscle pump
- respiratory pump

1 mark for each reason, max. 2

- increase in stroke volume
- increase in cardiac output
- more blood/oxygen to working muscles
- more carbon dioxide removed via the lungs

d 1 mark per point, 2 marks max. for oxygen transport:

- dissolves in plasma
- combines with haemoglobin
- to form oxyhaemoglobin

1 mark per point, 2 marks max. for carbon dioxide transport

- dissolves in plasma
- combines with haemoglobin
- to form carbaminohaemoglobin
- dissolves in water/forms carbonic acid
- dissociates to hydrogen carbonate ions/bicarbonate ions



- e Levels question, max. 10 marks (see levels scheme on page 3)

The question involves changes in heart rate by neural, hormonal and intrinsic control.

Points to check for:

Neural control

- chemoreceptors detect an increase in carbon dioxide
- baroreceptors detect an increase in blood pressure
- proprioceptors detect an increase in muscle movement
- impulse is sent to the cardiac control centre/CCC
- under the control of the autonomic nervous system
- impulse is sent via the cardiac accelerator nerve
- SA node stimulated
- sympathetic control
- heart rate increases

Hormonal control

- adrenaline/noradrenaline is released
- anticipatory rise
- heart rate increases
- greater force of contraction

Intrinsic control

- during exercise, heart gets warmer so heart rate increases
- increase in venous return
- stretches the cardiac muscle
- SA node is stimulated
- heart contracts with more force



Question 2

a 1 mark per point, max. 4

- learned
- efficient
- consistent
- aesthetic
- goal-directed
- controlled
- fluent

b 1 mark per point, max. 6

- self-paced
- batsman controls rate of execution
- gross
- large muscle groups involved
- discrete
- clear beginning and end

c 1 mark per point, max. 6

Short-term memory:

- working memory
- deals with the present
- limited capacity, 5–9 items
- 30–60 seconds duration
- receives information from the sensory store
- rehearsed information passed to LTM

Long-term memory:

- large capacity
- lasts a lifetime
- stores motor programmes
- receives information from STM
- sends programmes back to STM for current use
- two-way relationship between STM and LTM

d 1 mark per point, max. 4

- association with other information
- practice
- mental rehearsal
- chunking
- reinforcement
- intense experience



- e Levels question, max. 10 marks (see levels scheme on page 3)

Processing information in sport — points to check for:

- display — information from the sporting environment
- picked up by the senses — touch, equilibrium, vision, audition, kinaesthesia
- in the perceptual mechanisms
- filtering by selective attention
- separates relevant information from irrelevant
- passes stimulus on to translatory mechanisms
- translatory mechanisms
- information compared to memory
- decisions made
- effector mechanism sends impulses to muscles
- muscles contract
- response
- feedback after response to correct errors
- may be intrinsic, from within
- extrinsic from outside source — coach
- diagram of information processing model may be used as base for answer



Question 3

a 1 mark per point, max. 3

- strict rules/organised/NGBs
- officiated
- endeavour/effort
- prowess/high skill levels/elite levels
- strict time limits
- set place/space
- intrinsic rewards
- extrinsic rewards/professional
- fair play/sportsmanship/gamesmanship
- specialist kit/equipment

(Note: when a specific number of points are asked for, the examiners will limit their marking to that number of points. Therefore only the first three responses will be marked for a and b.)

b 1 mark per point, max. 3

- traditional
- local
- social/community based
- festival occasions/celebrations
- ritual/religious links
- rowdy
- tourism

c 1 mark per point, max. 4

- high cost of membership fees/entrance fees to facilities
- cost of kit/equipment
- cost of coaches/trainers
- transport costs
- childcare costs
- lack of time/long working hours
- lack of self-esteem
- lower initial fitness levels

d 1 mark per point, max. 4

- catering for traditional male audience/television concentrates on traditional sports for mass audience appeal
- greater percentage of males play sport/are interested in sport
- dominant positions in the media held more by males (e.g. sports editors)
- dominance in sport of male role models/lack of female role models
- male-dominated sports attract the largest audiences/increased sponsorship opportunities
- viewers prefer the faster, dynamic action from male athletes to the slower, more technical performances of female athletes

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- e 1 mark per point, max. 6, sub-max. 4 for arguments for
- battle against drugs is expensive/time-consuming
 - detection is not always effective
 - high performance standards demanded by spectators/sponsors
 - levels the playing field for all

Sub-max. 4 for arguments against

- health risks/dangerous side effects
- negative role models for youngsters
- pressure may force performers to use drugs against their will (e.g. from coaches)
- sport should be about using the natural talent available
- it is cheating/illegal/unethical
- it can be expensive/an uneven playing field as only performers from richer countries are able to afford drugs

- f Levels question, max. 10 marks (see levels scheme on page 3)

The question involves the identification of impacts of technology on the performer, the coach and spectators.

Points to check for:

Performer

- increased knowledge of diet and supplements
- faster rehabilitation
- due to oxygen tents/ice baths etc.
- improved fitness/skills testing/analysis to provide continuous feedback on whether training programmes are working
- advances in psychological techniques, e.g. stress management and arousal control
- facilities to recreate climates/competitive environments
- advances in clothing enable performer to continue working at higher intensity levels
- advances in equipment to aid performance monitoring, e.g. heart rate monitors/smart shirts

Coach

- match analysis via video
- instant technique analysis now possible, e.g. Dartfish
- more detailed/specific information available to inform/provide a more relevant/focused training programme
- new training techniques to improve performance, e.g. SAQ — speed, agility and quickness

Spectator

- improved experience at home, e.g. camera angles/player cam
- increased accessibility to a wider range of sports through media advances
- technological developments have allowed more interaction with the audience, e.g. hawk-eye in tennis, video referees in rugby union and rugby league



Frequently asked questions

There are three compulsory questions in Unit Test G451, each worth 30 marks. Each question is broken down into parts covering the different topics of each section of the specification. You must answer all the parts. The questions get progressively more difficult, so that an early part of the question might require you to make a list or recall a fact, whereas later parts might require more analytical comment. The most frequently asked questions are as follows.

Section A Anatomy and physiology

Joint movement analysis

There is nearly always a question on this topic. You are often asked to identify a joint type, name the articulating bones, the movement, and the agonist and antagonist muscles. Questions usually involve a picture of a sporting action from which a table needs to be completed.

Sometimes you are asked to name a type of contraction being performed. Remember that eccentric contractions only occur on the downward phase of a movement, for example the rectus femoris in a squat, the triceps brachii in a press-up and the biceps femoris in an arm curl. Otherwise, if there is movement, it is a concentric contraction or if the movement is held then it is an isometric contraction.

Motion and movement

The mark allocation for a question on this area is usually lower. Questions can involve the size, direction and application of forces, Newton's laws of motion, the type of motion (linear, angular and/or general) and the factors affecting balance.

The heart

Questions on heart rate, stroke volume and cardiac output are always popular. Make sure you can represent each of these graphically and give values at rest and during exercise. Questions on the cardiac cycle and the conduction system often occur — make sure you know how they link together. Neural, intrinsic and hormonal control also occur regularly, so are worth revising.

Vascular system

The most popular questions on blood flow concern the mechanisms involved in venous return (the skeletal muscle pump, respiratory pump and valves) and the redistribution of blood (vascular shunt). When answering, make sure you mention chemoreceptors detecting an increase in carbon dioxide and give an explanation of vasoconstriction, vasodilation and precapillary sphincters.

Respiration

This is a popular topic and more than one question may appear on the paper. The most frequently asked questions include the mechanics of breathing, identification of lung volumes, an explanation of gaseous exchange either at the lungs or the tissues, neural control of breathing and the transportation of oxygen and carbon dioxide.

The impact of physical activity

This is a new addition to the OCR specification and questions may be asked on the impact of physical activity on each of the systems learnt — joints and muscles, the heart, and the vascular and respiratory systems. Make sure you can identify how the different types of exercise affect these systems.



Section B Acquiring movement skills

Theories of learning

Questions on this topic tend to ask 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 give an example to show how the theory is put into practice. It is common to be asked about the phases of learning and how each phase relates to a different stage of performance ranging from novice to expert. The use of reinforcement is a common exam question, and for this part of the specification you should make sure that you are aware of the differences between positive reinforcement, negative reinforcement and punishment. Schema theory and the theory of transfer of learning are common themes. Learn the difference between positive and negative transfer and then learn the four parts of a schema that are used when this theory is put into action. 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 schemata to develop.** (3 marks)
- c Name the three stages of learning and describe the characteristics of the level of performance associated with each stage.** (3 marks)

Answers

- a**
 - initial conditions/environmental conditions
 - response specifications
 - sensory consequences/kineathesis/knowledge of performance
 - response outcomes/knowledge of results
 - recognition/recall schema
- b**
 - varied practice conditions
 - practice relevant to game/conditioned games
 - frequent feedback (continuous and terminal)
 - include transferable information from other sports
 - mental rehearsal
- c** Cognitive/associative/autonomous

Cognitive — performer is trying to understand what he/she needs to do and attempts skill/trial and error; thinking about what he/she is doing

Associative — movement is smoother/lots of practice stage/motor programmes developing

Autonomous — automatic/doing it without thinking/concentrate on other aspects of skills/high speed and efficiency/few errors

Questions and Answers



Types of practice

Questions on the types of practice and guidance usually call for a comparison, along the lines of advantages and disadvantages of one type of practice, or how you would use a type of guidance with a novice and an expert. The other theme on this topic is the circumstances under which you would use each type of guidance and practice. It is essential therefore that you learn the main points of each type of practice and guidance 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 Guidance can be described as an aid to practice. Name two different styles of guidance. Give an example of when each could be used in a physical education session.** (4 marks)
- b Skills can be practised mentally and physically. What is meant by the term mental rehearsal? Using examples from sport, explain the advantages of using mental rehearsal to practise a physical task.** (4 marks)
- c Skills can be taught in parts or in their entirety. What are the advantages of using the whole method of practice when coaching sports skills?** (3 marks)

Answers

- a** Any two from:
- visual — mental picture; for beginners; demonstration
 - verbal — explanation; describing tactics; for expert
 - manual/mechanical — danger; beginners/early learning
- b** Going over the performance in the mind without movement
- faster reaction times
 - muscle receptors activated
 - motivation
 - builds motor programmes
 - builds confidence
 - lowers arousal/anxiety
- c**
- builds understanding
 - develops a feel for whole skill
 - develops fluency
 - builds motor programmes
 - links stimulus to response

Arousal and performance

The relationship between arousal and performance is often examined by asking you to describe drive theory and the inverted U theory. You should be able to draw a graph and explain the main points of each theory, stating how optimum levels of arousal can differ for an expert and a novice performer.

- a Describe drive theory and use this theory to explain the effects of high arousal on both a novice and an experienced performer.** (4 marks)
- b The relationship between arousal and performance can be explained using the inverted U theory. What are the main features of this theory?** (5 marks)

Questions and Answers



Answers

- a** Drive theory: as arousal increases, performance improves/linear relationship
 - increases the likelihood of the dominant response occurring
 - if the task is simple or well-learned, or the performer is elite/experienced, the dominant response is more likely to be correct
 - for complex/unlearned skills, or if the performer is a novice, increasing arousal damages performance as the dominant response is incorrect
 - correct graph showing linear relationship
 - formula: $P = D \times H$

- b** Inverted U theory: an increase in arousal causes an increase in performance up to an optimal point
 - beyond that point performance deteriorates
 - lower optimal arousal for complex skills/higher arousal for simple skills
 - lower optimal arousal for fine skills/higher arousal for gross skills
 - lower optimal arousal for novice performer/higher arousal for expert
 - correct graph
 - under- and over-arousal can be equally bad for performance



Section C Sociocultural studies relating to participation in physical activity

Physical activity

Popular questions for this part of the specification include definitions of key terms, such as exercise, prowess, endeavour, and physical and outdoor education. In addition, you should be aware of the key characteristics and benefits of a number of key concepts, such as sport, physical and outdoor recreation and education, since these appear regularly in exam papers.

Sport and culture

Characteristics and reasons for the survival of ethnic sports are popular exam topics. Other areas likely to feature include explanations of the nature of sport in the USA and Australia, linked to an analysis of their national games — American football and Aussie Rules football respectively.

Contemporary issues

This part of the specification covers a wide variety of topics, which feature regularly in exams.

Knowledge of the different levels of the sports development pyramid is important. You should also be able to identify organisations and initiatives involved at opposite ends of the pyramid, for example UK Sport/UKSI at the elite level, and the home country sports councils trying to raise community sports at the lower levels of participation.

The terms **opportunity**, **provision** and **esteem** are important. You may be asked for definitions of these terms, or asked to relate each term to the causes of under-representation in physical activity by certain target groups. You should revise the causes of low levels of participation among groups such as the elderly, ethnic minorities, disabled individuals and women, and solutions to the problem, since this topic appears frequently in exam papers. For example:

Discuss the factors affecting participation in physical activity by elderly individuals.

(4 marks)

Questions on sports technology and deviance in sport are popular among students because they relate to contemporary sporting issues that are very much in the news. Here are some examples of exam-style questions:

Outline reasons why drugs in sport should be banned.

(3 marks)

Discuss possible causes of spectator violence in association football.

(4 marks)

Why might sports performers become violent?

(3 marks)

The 'golden triangle' linking to sport, sponsorship and the media may well appear as a 'levels' question. The levels question is the highest-scoring question on the paper, testing knowledge across two or three topic areas. It requires a variety of relevant points backed up by appropriate examples. The quality of written communication will be assessed and marks will be awarded for spelling, punctuation and grammar, use of appropriate form and style of writing, and for organising your work clearly and coherently. Bullet-point answers will therefore limit achievement on such high-scoring questions. In relation to the 'golden triangle', you need to cover all aspects of the relationship between sport, sponsorship and the media, illustrating your points with clear explanations of your arguments and relevant examples to develop the points you are making.

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Finally, the Olympic Games are a prominent feature of the specification and questions are likely to occur in the G451 paper in Section 3. For example:

Explain the main aims of the IOC. (2 marks)

Explain the main aims of the BOA. (2 marks)

Discuss the advantages and the disadvantages of hosting the Olympic Games. (5 marks)

Questions and Answers



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 G451 exam is a 2-hour written exam. It is worth 60% of the total AS mark and 30% of the total A-level mark. There is one structured question from each section area of the specification — Anatomy and Physiology, Acquiring Movement Skills and Sociocultural Studies Relating to Participation in Physical Activity. Each structured question is worth 30 marks.

All questions must be answered. Questions marked * are worth 10 marks and require an extended answer. The quality of written communication is assessed in these answers and they are marked according to a 'levels' scheme. For example:

Level 3 (8–10 marks)

- addresses all aspects of the question, illustrating a wide range of knowledge
- good use of examples to illustrate points made
- clearly expressed points/arguments
- accurate technical and specialist vocabulary is used throughout
- excellent spelling, punctuation and grammar

Level 2 (5–7 marks)

- addresses most aspects of the question, demonstrating some knowledge
- some examples to develop/support answer
- technical and specialist vocabulary is used with some accuracy
- few errors in spelling, punctuation and grammar

Level 1 (0–4 marks)

- addresses some aspects of the question
- basic knowledge but little understanding evident
- few, if any, examples used
- limited technical and specialist vocabulary
- written communication lacks fluency and has some errors in spelling, punctuation and grammar



Section A Anatomy and physiology

Question 1

- a The photograph shows a sprinter during a race.



Apply your knowledge to complete the following movement analysis of the front leg.

(5 marks)

Joint	Joint type	Articulating bones	Movement	Agonist
Hip		Acetabulum and head of femur		
Knee	Hinge		Flexion	

- b** It is important for a gymnast to understand the influence of the centre of mass (gravity) when performing a balance. Using a headstand as an example, describe the factors that affect its performance. (5 marks)
- c** Describe how the conduction system of the heart controls the cardiac cycle to ensure that enough blood is ejected from the heart during a training run. (5 marks)
- d** Outline the positive impact of participating in different types of physical exercise on the bones and joints of the body. (5 marks)
- *e** During prolonged aerobic exercise, a performer requires more oxygen to diffuse into the bloodstream and then be transported to the working muscles. Explain how gas exchange increases at the lungs to ensure that a greater amount of oxygen is diffused into the blood and then into the muscles, and describe the passage of oxygenated blood as it travels through both the systemic and pulmonary circulatory networks. (10 marks)



Section B Acquiring movement skills

Question 2

- a** It is important to learn motor skills if you want to follow an active, healthy lifestyle. When learning motor skills, it has been suggested that the learner passes through three phases of learning. Identify the three phases of learning and describe the key characteristics of each phase. (6 marks)
- b** Abilities often affect participation in physical activities. What is meant by the term *ability*? Give examples of a gross motor ability and a psychomotor ability. (5 marks)
- c** The learning of motor skills can be affected by transfer. What does *transfer of learning* mean? Explain the difference between positive and negative transfer. Use examples from sport to illustrate your answer. (5 marks)
- d** A coach may help in the learning of motor skills by using guidance. What are the advantages and disadvantages of using manual or mechanical guidance when learning motor skills? (4 marks)
- *e** The learning of motor skills is influenced by practice. Discuss the use of massed, distributed, fixed and varied practice methods used during the learning of motor skills. Say when and how you would use each method. (10 marks)



Section C Sociocultural studies relating to participation in physical activity

Question 3

- a** List four life skills that can be gained by taking part in outdoor and adventurous activities as outdoor education. (4 marks)
- b** Outline the reasons why some sports, for example gymnastics, receive limited media coverage compared with others, such as football. (5 marks)
- c** Discuss the suggestion that hosting the 2012 Olympic Games will benefit the UK. (6 marks)
- d** What reasons can be given for physical activity having such high status in Australia? (5 marks)
- *e** With reference to *opportunity, provision* and *esteem*, discuss a range of factors affecting the participation in sport/physical activity by people with disabilities. (10 marks)



Section A answers

Question 1

- e** When filling in a table, always make sure that you have put the information in the correct column.

A common mistake in naming the articulating bones of the knee is to include the fibula, so make sure you stick to just the femur and tibia.

Hamstrings and quadriceps are the collective names for groups of muscles and marks will not be awarded if you use these terms. You must give the name of a hamstring, for example biceps femoris, and the name of a quadriceps, for example rectus femoris, if it is asked for.

a	Joint	Joint type	Articulating bones	Movement	Agonist
	Hip	Ball and socket ✓	Acetabulum and head of femur	Flexion ✓	Iliopsoas ✓
	Knee	Hinge	Femur and tibia ✓	Flexion	Biceps femoris, semimembranosus, semitendinosus ✓

- b e** A question on balance usually requires knowledge of the factors that can affect the stability of a balance. Sometimes you will be given a named balance to comment on and other times you may be asked to name a balance. Keep it simple — use the headstand or handstand.

1 mark for each of the following:

- headstand has a large area of support
- three points of contact
- low centre of mass
- centre of mass is over the base of support
- centre of mass must stay over the base of support otherwise balance is lost

- c e** It is easy to learn the cardiac cycle and the conduction system as two separate sections. This is fine if the question asks for one or the other. However, questions can link the two together, so make sure you are aware of this and can apply your knowledge.

1 mark for each of the following (max. 5):

- impulse initiates from SA (sinoatrial) node
- this causes the atria to contract/atrial systole/blood ejected from the right and left atria/atrial depolarisation
- impulse received by AV (atrioventricular) node
- impulse conducted down Bundle of His
- up the Purkyne/Purkinje fibres
- this causes the ventricles to contract/ventricular systole/blood ejected out of right and left ventricles/ventricular depolarisation
- the atria/ventricles relax to allow the heart to refill with blood

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- d **e** The impact of exercise on the bones and joints of the body is a new area of study. Make sure you are aware of the different types of exercise available and the effects they can have on the body. Be careful — the question might ask for the positive or negative effects, so answer accordingly.

1 mark for each of the following (max. 5):

Low-impact endurance activities:

- lead to stronger bones/more calcium deposits
- can vary the line of stress on bone

Strength/core stability exercise leads to:

- increased stability of joints, e.g. increased strength in rotator cuff muscles stabilises the shoulder joint
- increased strength in quadriceps, which helps to stabilise tracking and knee function
- reduced likelihood of problems with lumbar vertebrae

Flexibility exercise:

- maintains range of movement around the joints
- mobilises joints/lubricates with synovial fluid

Impact activities either from contact or landing:

- less chance of damaging immature bones/growth plate

- e **e** This is an extended question worth 10 marks and marked according to a 'levels' scheme. To gain 10 marks, you need to make at least ten points. Your answer needs to be structured logically and in continuous prose.

The first part of the question is worth 6 marks; the second part is worth 4 marks. This is not indicated in the question, so make sure you give as many answers as you can for each part (good practice in any question that does not ask for a specific number, e.g. state four reasons..., in which case you must give only four).

1 mark for each of the following (max. 10):

Gas exchange at the lungs (sub-max. 6)

- gases move from areas of high pressure to areas of low pressure
- partial pressure of oxygen (pO_2) is higher in the lungs/alveoli
- pO_2 is lower in the blood
- increase in the diffusion/concentration gradient
- therefore oxygen diffuses into the bloodstream
- now there is a higher pO_2 in the blood
- lower pO_2 in the muscle (cell)
- therefore O_2 diffuses into the bloodstream
- increase in temperature allows increased release of oxygen from haemoglobin/increased dissociation of oxygen
- Bohr effect/increase in acidity/increase in CO_2 /carbonic acid/lactic acid/lower pH of blood allows greater release of oxygen from haemoglobin
- myoglobin has a higher affinity for oxygen than haemoglobin
- myoglobin is used to transport/store more oxygen (to mitochondria)

Questions and Answers



Passage of oxygenated blood (sub-max. 4)

- oxygenated blood is transported from the lungs
- transported through the pulmonary vein
- blood enters the left atrium
- passes through the bicuspid valve/AV valve
- moves into the left ventricle
- bicuspid/AV valves close
- pumped to the aorta and to the body
- passes through the semilunar valves/valves close to prevent backflow



Section B answers

Question 2

- a **e** This question requires you to recall the names of the three phases of learning. You then need to give a brief summary of the key characteristics of each phase. In this 6-mark question, 1 mark is awarded for the correct name of each phase and another mark for identifying a key characteristic associated with it. You should therefore construct your answer in a logical fashion. Do not be tempted to write too much on one phase because you will get a maximum of 2 marks for each phase.

The first phase of learning is called the cognitive phase ✓. This phase is appropriate for beginners ✓ who are trying to understand what needs to be done. Trial and error may be used during this early learning stage and the performance may seem uncoordinated and lacking in fluency ✓.

The second phase of learning is called the associative phase ✓. In this phase, the motor programmes are being developed ✓ through long periods of practice ✓. The performance is smoother and more flowing ✓.

The final phase of learning is called the autonomous phase ✓. The performer has developed a motor programme and is able to use automatic or open-loop control to produce smooth, fluent action ✓. He/she can concentrate on the finer details of the task ✓. Practice, mental rehearsal and intrinsic feedback are needed to maintain performance ✓.

- b **e** This question requires simple recall of the characteristics of ability and then more specific examples of gross motor and psychomotor ability. Again, you should relate the number of marks to the wording of the question. There is 1 mark for an example of gross motor ability, 1 mark for an example of psychomotor ability and therefore 3 marks available for the description of what is meant by the term ability.

Ability is an innate ✓ characteristic that provides the foundation for learning skills ✓. Abilities are enduring ✓ — they last a long time. They are specific to movement ✓ — for example, coordination is the underlying natural ability needed to learn how to pass in rugby. Gross motor abilities are the characteristics needed to perform large muscular movements — for example, speed is needed to chase a kick ✓. A psychomotor ability is used to make sense of information — for example, the decision-making needed to pick out which player to pass to ✓.

- c **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. Show your understanding of the relative terms by using appropriate examples.



Transfer of learning is the effect of the learning and performance of one skill on the learning and performance of another ✓. 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 — the learning and performance of one skill is 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 over-arm action when serving in both tennis and volleyball ✓. Negative transfer occurs when the skills have some similarities but the actions are not the same, such as a badminton serve and a tennis serve ✓.

- d** **e** This question asks you to make distinctions. You have to compare the advantages and the disadvantages of the two methods of guidance. Make sure you balance your answer by discussing at least three advantages and at least three disadvantages. You will probably gain a maximum of 2 marks for each but it is worth adding extra points to make sure you gain all the available marks.

Manual and mechanical guidance are attempts to help learners by either manual support, such as may be used in a gymnastics vault, or a physical device, such as a swimming armband. The advantages of such methods are that they can be used to build confidence ✓ and give the learners an early feel for the task ✓, which they would not otherwise be able to complete. Another main advantage is safety ✓ in that these methods eliminate danger — an obvious example is using armbands when swimming. However, the coach should be careful to limit the use of these forms of guidance since the disadvantages are that the learners may come to depend on them ✓ and if they begin to feel that they are unable to do the task without the support, they could begin to lose motivation ✓. The support or device can begin to interfere with the true feel of the task if used too much and learning can be hindered ✓.

- e** **e** This is an extended question designed to test your ability not only to recall facts and apply those facts to sporting situations but also to present a logical appraisal of how you can apply your knowledge. The question asks you to make distinctions between four different practice methods. You will gain extra marks if you write using correct spelling, punctuation and grammar in addition to being able to explain key points.

Massed practice is when the performer is given no rest intervals ✓ during the practice session. It can be used when the skill is discrete ✓ with a clear ending, or in the later stages of learning a serial task such as when a dancer puts together the entire sequence of a routine without a break. For massed practice, the performer has to be fit and well motivated ✓. The coach might use it to make sure that the skill becomes almost automatic in its execution ✓, in other words, the performer may have reached the autonomous phase of learning ✓. Massed practice ensures that the skill is learnt well but it may cause fatigue ✓ and the coach is unable to offer feedback ✓ during the performance.



Distributed practice offers a solution to the problem of giving feedback during performance in that the performer is allowed a rest ✓ during the practice session. Coaching points ✓ and even mental rehearsal can be used during the rest interval. Distributed practice tends to be used for beginners ✓ and for skills that can be broken down, such as a swimming stroke ✓ when the coach can teach the arm action and then give the swimmer a rest before concentrating on the leg action. It can be used for people who are lacking in fitness ✓ and to provide motivation ✓ — praise can be given during the rest interval. It can be used in the earlier stages of learning so that, for example, a dancer may perform only the first part of a routine and then rest before adding the second part, thus gradually building progress. It can also provide a safer approach to learning since the learner will be able to gain advice on safety and recover during the rest interval. A problem with distributed practice is that negative transfer ✓ could occur if the coach fails to link the practice sessions together after the break. The process of distributed practice is more time-consuming ✓.

A more efficient way of coaching is to use the fixed method of practice, when the skill is repeated ✓ over and over again. This ensures overlearning ✓ of the task so that it becomes habitual and motor programmes ✓ are formed in the long-term memory. Fixed practice is used for closed skills ✓ that are not affected by the environment. Actions are likely to be the same, for example the way in which a shot putter would practise his/her technique repeatedly, or a tennis player might practise a particular type of serve a number of times ✓. The problem with fixed practice is that the performer might become bored with doing the same thing, resulting in loss of motivation and fatigue ✓.

To add motivation to the practice session, the coach could use varied practice, where different skills ✓ and drills are used to apply the skill to different situations. Varied practice tends to be used for open skills ✓ when the performer has to adapt and make decisions, such as when to pass in a three-on-two situation. Varied practice is appropriate for beginners ✓ so that they can gain experience and its use helps to develop a schema ✓ that can be used in game situations. The problem with varied practice is that it can take more time ✓ and the coach has to be careful that negative transfer ✓ does not occur when different skills and drills are used.



Section C answers

Question 3

- a **e** If a specific number of points is asked for, limit your answer to that number of points (four in this case). This question asks for a list, which means simple words/phrases will score marks if relevant to the question.

Any four terms from the following:

- cooperation/teamwork
- leadership
- communication/social skills
- knowledge of strength and weaknesses/knowledge of self
- decision-making
- judgement of risk/danger/safety awareness
- respect for the natural environment

- b **e** As no specific number of points is asked for in the question, try to make more points (six or so in this case) than there are marks available, just in case some points are considered too similar, or are deemed to be irrelevant/vague. Positive marking ensures that an examiner will mark everything in the hope of finding credit-worthy marks.

Reasons for the limited media coverage of certain sports include:

- less popular with viewers/predominantly female
- limited target audience
- seen as less entertaining/less exciting
- difficulty in breaking into prime-time, male-dominated viewing slots
- less attractive to sponsors as they do not make money from minority sports
- fewer role models
- difficult to televise certain sports (e.g. yachting)
- the public have a limited knowledge of certain sports/rules

- c **e** This question asks you to 'discuss', which requires points from both sides of the argument. Each side of the argument will have a sub-max. of around 4 marks. One part of your answer should therefore focus on positive benefits to the UK of hosting the 2012 Olympics while the other should outline some possible negative effects of being the host nation. With no specific number asked for in the question, try to make more points than there are marks available (in this case, four from each side of the argument).

Positives:

- urban regeneration/development of sport facilities
- improved infrastructure
- increased tourism/economic benefits
- increased participation rates
- national pride
- integration of communities
- social control/less crime



Negatives:

- relocation of home owners/businesses (sometimes forced)
- increased cost to the tax payer
- legacy of debt
- increased security risk/threat of terrorist attack
- disruption to normal life
- legacy of unused/expensive facilities
- a 'poor' games may affect future bids for major games

- d** **e** Try to make six or seven points with a brief explanation of as many of them as possible to illustrate your knowledge of what makes physical activity (sport, recreation, PE) so popular in Australia.
- high levels of government support/funding
 - the health consciousness of Australia/outdoor lifestyle/its promotion of a 'feel-good factor'
 - favourable climate for physical activity
 - high status given to PE/sport in schools
 - sporting success unites the nation/small population
 - international success is proof of the progress Australia is making/sport is used to advertise itself
 - there is a high degree of media interest/support in sport
 - Australia is an egalitarian society, as reflected in equal opportunities to participate in physical activity
- e** **e** This question requires you to show detailed knowledge of terms drawn directly from the specification (opportunity, provision and esteem). As the last question in this section, and with a possible 10 marks available, it is important that you organise your answer in a logical way, writing in paragraphs of continuous prose. Try to give explanations and examples expanding on the key points made.

Examples of factors affecting participation in sport/physical activity by people with disabilities include:

Opportunity

- cost of participation (e.g. specialist wheelchairs)
- lack of sponsorship given to disability sport
- Paralympians rely on lottery funding to train/compete
- lack of media coverage
- lack of sports clubs/competitions to develop skills and experience competition
- lack of awareness by disabled individuals of the opportunities available
- problems are multiplied if gender/race/age restrictions also apply

Provision

- lack of specialist equipment adapted to the needs of the disabled
- lack of specialist transport to get to sporting venues
- lack of specialist coaches
- physical access problems (e.g. ramps to assist movement into and around facilities)

Questions and Answers



Esteem

- few role models at participation/excellence levels
- low self-esteem
- discrimination/prejudice against disabled individuals in sport/physical activity
- myths/stereotypes that lead to narrow attitudes and limit expectations concerning sports participated in by the disabled