

Mark Scheme

Chapter 1

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Question number	Question	Answer guidance	Marks
1.	Describe one possible impact of a sedentary lifestyle	Award 1 mark for identifying a possible impact of a sedentary lifestyle and a further mark for a description of the impact identified	(AO1 – 2 marks)
2.	Compare the diets of a typical marathon runner and a typical 100m sprinter during the build-up to a race	Carbohydrates: ➤ Marathon runner – will need a high level due to intensity and duration ➤ Predominantly starchy carbohydrates ➤ Carbohydrate-loading Proteins: ➤ 100m sprinter – will need protein for muscle growth and repair ➤ Will need to build muscle for power and speed Fats: ➤ Low for both so as not to carry excess weight	(AO2 – 4 marks)
3.	A downhill mountain biker needs to contract her leg muscles quickly and apply force to the pedal in an explosive act to generate speed and complete the course in the fastest time possible		
a)	Other than speed, identify one component of fitness the mountain biker requires	Any suitable component of fitness related to riding a bike (other than speed), e.g. muscle endurance is used when continually using the leg muscle to pedal the bike	(AO1 – 1 mark)
b)	Outline a definition of the component of fitness you identified in part a)	Accurate definition of the component of fitness identified in part a)	(AO1 – 1 mark)
c)	Identify a fitness test that can be used to test the component of fitness you named in part a)	Suitable test for the component of fitness named in part a)	(AO1 – 1 mark)

Question number	Question	Answer guidance	Marks
4.	Football players need to develop speed to help them cover the pitch		
a)	Identify a method of training that a centre forward in football could use to develop their speed	Accept interval or plyometric training	(AO1 – 1 mark)
b)	Speed relies on the anaerobic energy system. What percentage of a player's maximum heart rate are they likely to be working at when sprinting down the pitch?	80% of maximum heart rate or more	(AO1 – 1 mark)
5.	Explain how an athlete can use the principles of training to improve their performance	<p>Answer must refer to the principles of training (SPOV).</p> <p>S – Specificity. The training must be relevant to the component of fitness/individual/activity</p> <p>P – Progression. Training becomes progressively more difficult</p> <p>O – Overload. Pitch activities slightly above the performer's comfort zone/increase frequency, intensity and duration</p> <p>V – Variance. Changes in training to maintain motivation and interest</p>	(AO2 – 4 marks)
6.	Describe one benefit of cooling down after completing a training session	<p>Award 1 mark for:</p> <ul style="list-style-type: none"> ➤ Reduces recovery time/returns body to pre-competition levels <p>Award 1 additional mark for the amplification:</p> <ul style="list-style-type: none"> ➤ Gradually cools body temperature ➤ Returns muscles to their optimal length–tension relationships ➤ Prevents venous pooling of blood in the lower extremities ➤ Removes waste products ➤ Replenishes nutrients/hydration levels ➤ Reduces effects of DOMS ➤ Repays oxygen debt <p>Award a maximum of 1 mark for two amplifications.</p>	(AO1 – 2 marks)

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Chapter 2

Question number	Question	Answer guidance	Marks
1.	A javelin thrower needs to generate speed and power to throw the javelin in a competition		
a)	Identify the bones that articulate at the elbow joint as the thrower prepares to release the javelin	Award 1 mark for one or two correctly identified. Award 2 marks for all three: <ul style="list-style-type: none">➤ Humerus➤ Radius➤ Ulna	(AO1 – 2 marks)
b)	Identify and explain which muscle fibre type is most likely to be used in the run-up	Muscle fibre type: Fast twitch/Type II (1 mark) Award additional 1 mark for explanation (one of the following): <ul style="list-style-type: none">➤ Generate explosive movement➤ Generate speed/power➤ Short explosive movement➤ Use no oxygen/anaerobic	(AO1 – 2 marks)
2. a)	Complete the diagram of the heart by writing the letters from the diagram in the table next to the correct chamber	Award 2 marks if all four are correct. Award 1 mark if three or fewer are correct: Right atrium A Left atrium C Right ventricle B Left ventricle D	(AO1 – 2 marks)
b)	Explain how the alveoli enable gaseous exchange to take place	Award 1 mark for any of the following points made (to a maximum of three): <ul style="list-style-type: none">➤ Alveoli have thin, moist walls which allow diffusion to take place➤ Capillaries are wrapped around alveoli walls, which increases efficiency of diffusion➤ Oxygen enters blood stream through the thin wall of capillaries➤ Oxygen attaches to haemoglobin in red blood cells	(AO2 – 3 marks)

Question number	Question	Answer guidance	Marks
		<ul style="list-style-type: none"> ➤ Oxygen leaves the alveoli and enters the blood stream to be used in the body ➤ Carbon dioxide leaves the blood stream and enters the alveoli to be exhaled 	
3.	Look at the image of a 100m race		
a)	Identify the dominant energy system used in this event	Anaerobic energy system/lactic acid system/anaerobic glycolysis system	(AO1 – 1 mark)
b)	Identify three characteristics of the energy system identified above	<p>Award 1 mark for any of the following points made (to a maximum of three):</p> <ul style="list-style-type: none"> ➤ No oxygen required ➤ A fast supply of energy ➤ Creatine phosphate is the fuel used ➤ Used for high-intensity activities ➤ Used in short duration activities ➤ Leads to oxygen debt/lactic acid build-up ➤ Limited amount of creatine phosphate/CP stored in the muscles 	(AO1 – 3 marks)
4.	Explain the long-term adaptations to the cardiovascular system after following an eight-week training programme	<p>Award 1 mark for any of the following points made (to a maximum of three):</p> <ul style="list-style-type: none"> ➤ Increase in size of the heart (cardiac hypertrophy) ➤ Decrease resting stroke volume ➤ Increase in cardiac output ➤ Increase in the number of red blood cells ➤ Reduction of resting heart rate ➤ Increase in number of capillaries 	(AO2 – 3 marks)

Mark Scheme

Chapter 3

Question number	Question	Answer guidance	Marks
1.	Athletes preparing for major competitions require a range of movements to compete fluently		
a)	A gymnast performs a handstand during a routine. Explain which muscle contraction takes place to hold a balance	Award 1 mark for: ➤ Isometric contraction Award 3 additional marks for amplification: ➤ No lengthening or shortening of the muscle ➤ Static movement ➤ Holding a balance	(AO2 – 4 marks)
b)	In order to perform a split leap, a gymnast pushes off the floor with one foot. (i) Identify the class of lever shown in the image	Second class lever	(AO2 – 1 mark)
	(ii) Explain the mechanical advantages and disadvantages of the class of lever shown in the image	Award 1 mark for any two of the following points made: ➤ Can lift heavy loads ➤ More efficient ➤ Load is closer to the fulcrum ➤ Shorter load arm ➤ Longer effort arm	(AO1 – 2 marks)
c)	A gymnast performs a routine that includes a somersault and a cartwheel (i) The gymnast runs forwards to gain speed in preparation for the somersault. Identify the plane of movement she moves through.	Sagittal plane	(AO1 – 1 mark)
	(ii) Identify the axis of movement that the gymnast's body rotates around while she performs a cartwheel	Sagittal axis	(AO1 – 1 mark)

Question number	Question	Answer guidance	Marks
d)	Explain, using appropriate examples, how a gymnast and a coach may use technology to help improve the gymnast's performance	<p>Award 4 marks for identifying any two of the following along with corresponding amplification:</p> <ul style="list-style-type: none"> ➤ Develop technique ➤ Identify strength and weakness ➤ Identify tactics ➤ Monitoring progress <p>Amplification points:</p> <ul style="list-style-type: none"> ➤ Develop technique through video analysis by refining performance ➤ The use of data to provide effective feedback ➤ The use of data, video replay for motivation ➤ Data analysis to identify training focus ➤ Monitoring progress through use of data analysis from GPS or heart rate monitors ➤ Use of technology to identify strategies and tactics ➤ Use of technology to identify strength and weakness of the opposition 	(AO2 – 4 marks)

Mark Scheme

Chapter 4

Question number	Question	Answer guidance	Marks
1.	<p>Before you start to plan a personal fitness programme, it is important to know what you want to improve</p> <p>Discuss how goal-setting can help you plan a personal fitness programme</p>	<ul style="list-style-type: none">➤ Ensures/gives/enables success➤ Recognises progress/progress made obvious/measurable/recorded➤ Encouraging and exciting➤ Gives evidence that you have become faster/stronger/fitter➤ Motivating➤ Control over what happens➤ Identifies challenges➤ Encourages adherence	(AO3 – 6 marks)
2.	<p>Feedback is an important component of information processing during sport</p> <p>Using examples from sport, explain why feedback is important when learning a new skill</p>	<p>Award a maximum of 2 marks for effects of feedback.</p> <p>Award a maximum of 2 marks for examples.</p> <ul style="list-style-type: none">➤ Motivates you to try harder➤ Reinforces good performance➤ Helps you to improve➤ Helps you to realise your errors➤ Increases confidence➤ Increases adherence levels	(AO2 – 4 marks)
3.	<p>Compare how coaches use guidance for performers in the cognitive and autonomous stages of learning</p>	<p>Award a maximum of 2 marks per stage of learning.</p> <ul style="list-style-type: none">➤ Mechanical guidance involves the use of equipment to help support the learner/shape the skill➤ Mechanical guidance is best used during the cognitive stage of learning as it helps the performer learn a movement while building confidence and getting a sense of how it should feel➤ Manual guidance is useful for all stages of learning. Uses physical support, which develops a kinaesthetic awareness and gives confidence to the learner	(AO2 – 4 marks)

Question number	Question	Answer guidance	Marks
		<ul style="list-style-type: none"> ➤ Verbal guidance should be simple and generic for learners at the cognitive stage ➤ Verbal guidance should be technical and specific for learners at the autonomous stage ➤ Visual guidance can be used to introduce learners at the cognitive stage to movements they have never seen ➤ Visual guidance can be used to aid analysis of movement at the autonomous stage 	
4.	Evaluate two mental preparation techniques a cyclist might use before a race	<p>Answer must include evaluation to gain full marks. Relevant points include:</p> <p>Imagery/visualisation</p> <ul style="list-style-type: none"> ➤ Imagining cycling the route/map ➤ Imagining the race using different senses, e.g. ‘seeing’ yourself overtaking an opponent ➤ Picturing a successful outcome, e.g. lifting the trophy, winning the race <p>Mental rehearsal</p> <ul style="list-style-type: none"> ➤ Picturing the component parts of the race ➤ Imagining what to do to be successful, e.g. when to accelerate ➤ Imagining using different senses, e.g. persevering as you ‘feel’ the fatigue in your legs <p>Impact of techniques</p> <ul style="list-style-type: none"> ➤ Confidence ➤ Control ➤ Challenge ➤ Commitment ➤ Arousal ➤ Anxiety ➤ Motivation ➤ Performance 	(AO3 – 5 marks)

Question number	Question	Answer guidance	Marks
5.	<p>BMX freestylers are regarded as having a high level of skill</p> <p>Explain two characteristics of a skilful performance using sporting examples</p>	<p>Award a maximum of 2 marks per characteristic for an explanation and an example. Answers do not have to relate to BMX freestyling.</p> <p>Answers should refer to characteristics of a skilful performance, with relevant explanations, for example:</p> <ul style="list-style-type: none"> ➤ Effectiveness (producing the desired result) ➤ Accuracy (performing with precision) ➤ Consistency (performing to the same standard each time) ➤ Control (executing a skill with a high degree of control) ➤ Confidence (self-belief when executing a skill) ➤ Efficiency (using less energy and executing the skill relatively effortlessly) ➤ Technique (including fluency, preparation, action and recovery) ➤ Aesthetics (executing the skill in a way that is pleasing to watch) <p>Accept explanations in the form of relevant examples from sport, for example a skilful centre in hockey should:</p> <ul style="list-style-type: none"> ➤ move around the whole pitch, be well balanced with fluent movements, footwork and stick control. Show good posture, speed and reactions ➤ select the correct pass at the correct moment and time. Passes will also be refined, precise and effortless 	(AO2 – 4 marks)

Question number	Question	Answer guidance	Marks
		<ul style="list-style-type: none">➤ have the ability to read the game, by watching opponents' actions➤ play to own strengths and opponent's weaknesses (tactics)➤ appear to move effortlessly and carry out actions with ease and without thinking➤ perform a wide variety of skills, shots and passes	

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Chapter 5

Question number	Question	Answer guidance	Marks
1.	Statistics show that boys are more likely to participate in sports than girls. Discuss strategies that have been used to increase the involvement of girls in sport	<p>Any suitable strategies with valid discussion.</p> <p>Strategies could include:</p> <ul style="list-style-type: none">› campaigns like 'This Girl Can'› female-only activities such as swimming and exercise classes› girls' clubs and teams <p>Discussion should include relevant points, e.g.:</p> <ul style="list-style-type: none">› increase self-esteem› raise awareness of opportunities› combat stereotypes› Some girls may feel more comfortable in female-only spaces	(A03 – 6 marks)
2.	Explain two positive impacts of commercialisation in sport	<p>Award a maximum of 2 marks for two valid responses and 2 marks for valid explanations, for example:</p> <ul style="list-style-type: none">› can enhance performance because sponsorship money allows better resources/more training› improves experience for spectators because of the availability of worldwide media streaming› can increase participation as it raises the profile of sports› makes money for the businesses and teams involved	(A02 – 4 marks)
3.	Discuss whether performance-enhancing drugs should be legalised in sport	<p>Answers should mention positive and negative points.</p> <p>Maximum of 2 marks for demonstrating knowledge and 4 marks for discussion.</p>	(A01 – 2 marks; A03 – 4 marks)

Question number	Question	Answer guidance	Marks
		<p>Answers could discuss the physical, moral, psychological, social implications of performance-enhancing drugs, for example:</p> <ul style="list-style-type: none"> ➤ cheating and integrity ➤ gamesmanship and sportsmanship ➤ the 'true spirit' of sports ➤ fairness and unfairness in competition ➤ role models ➤ impacts on the health of athletes ➤ enhancing performance makes it exciting to watch ➤ higher records ➤ allowing athletes greater personal achievements ➤ showing respect and passion ➤ giving sport a bad name 	