



Answers

For AS and A Level Year 1 OCR PE

Co-Teachable A Level + AS

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1.1a: Skeletal and Muscular Systems

Questions	
1. Identify five different joint types found in the body and provide an example of their location.	1. Ball-and-socket – hips and
	2. Pivot – wrist/hand and ne
	3. Gliding – spine, hand (bet
	4. Condylloid – wrist
	5. Hinge – knee, ankle and e
2. Name the possible movements carried out by the shoulder.	Flexion, extension, abduction, rotation, lateral rotation, circu
	Horizontal extension Horizontal flexion
	Deltoids, latissimus dorsi, pect
3. A tennis forehand involves movement of the arm away from the midline of the body and back towards the midline of the body while keeping the arm parallel to the ground. Identify the two movements described in this sporting movement.	
4. What are the five muscles responsible for movement in the shoulder?	

Joints, Movements and Muscles

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Joints, Movements and Muscles (continued)		Questions	
	5. During a bicep curl, two movements are completed by the elbow. Name and describe the two movements.		1. Flexion – decreasing the angle
			2. Extension – increasing the angle
	6. Which two muscles contract to cause flexion and extension at the elbow?		During flexion, the biceps brachii and brachialis contract to cause flexion. During extension, the triceps brachii contract to cause extension.
	7. Identify the muscles used in flexion and extension of the wrist.		Wrist flexors, wrist extensors
	8. Give a sporting example of flexion and extension of the wrist.		Flexion: volleyball spike, follow through of a tennis serve Extension: cricket batter waiting for the ball to come behind head
	9. The hip can complete six movement actions. Name these movements.		(accept other suitable examples)
	10. Identify which movement each of the following muscles of the hip cause when they contract.		Flexion, extension, abduction, adduction, medial rotation, lateral rotation
		Iliopsoas:	
		Gluteus maximus:	
		Gluteus medius and gluteus minimus:	
		Adductor longus, adductor brevis and adductor magnus:	

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Joints, Movements and Muscles (continued)		Questions	
	11. Identify the two movements of the hip when it rotates around its longitudinal axis in the transverse plane, such as when preparing and executing a judo kick.	Lateral rotation (preparation) Medial rotation (execution)	
	12. When kicking a football, flexion and extension of the knee occurs. Describe the stages of kicking a football in relation to flexion and extension of the knee.	- When preparing to kick the upper and lower leg, pulling the upper and lower leg, kicking - When executing a kick of the upper and lower leg, kicking	
	13. State the muscles found in the hamstring group and the quadriceps group of muscles.	Hamstrings group:	biceps femoris
		Quadriceps group:	rectus femoris
	14. Name and describe the movements that occur at the ankle.	Dorsiflexion – decreasing the angle Plantar flexion – increasing the angle	
	15. Name the muscles acting during ankle movement.	Tibialis anterior (dorsiflexion), Tibialis posterior (plantar flexion)	

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Questions		
	Frontal plane:	Divides t adductic
16. Describe the three planes of movement through which the body moves.	Transverse plane:	Divides t moveme rotation
	Sagittal plane:	Divides t motions flexion/ε
	Frontal plane:	any abd
17. Give an example of a sporting movement in each plane.	Transverse plane:	any hori golf tee
	Sagittal plane:	any flexi e.g. runn
	(accept other suitable examples)	

Joints, Movements and Muscles (continued)

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Functional Roles of Muscles and Types of Contraction		Questions	
	1.	Define the term 'agonistic muscle'.	An agonistic muscle is the main muscle responsible for the contraction of an agonistic muscle.
	2.	Define the term 'antagonistic muscle'.	An antagonistic muscle is the muscle that acts as a partner to the agonistic muscle to control movement.
	3.	Using a sporting example, explain how agonistic and antagonistic muscles work together in a pair.	(accept any relevant example) For example, during a basketball shot, the agonistic muscle is the biceps, and the antagonistic muscle is the triceps. The biceps contracts to extend the arm, and the triceps contracts to return the arm to its original position.
	4.	What is a fixator muscle?	A fixator muscle is a muscle that contracts to stabilise the joint during a movement.
	5.	Define the term 'isotonic muscle contraction'.	Isotonic muscle contraction is a type of contraction where the muscle length changes but the tension remains constant. Isotonic contraction includes concentric and eccentric contractions.

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Functional Roles of Muscles and Types of Contraction (continued)		Questions	
	6.	Describe and give an example of an isotonic concentric muscle contraction.	A concentric contraction is the when lifting a weight in a bicep place. (or other suitable exam
	7.	Describe and give an example of an isotonic eccentric muscle contraction.	An eccentric contraction is the example, when lowering a weight elbow takes place. (or other st
	8.	What is meant by the term 'isometric contraction'?	Isometric contraction is a muscle. It is, therefore, the of
	9.	Identify the muscle contraction occurring at the following muscles, during the given moments.	Biceps when lowering a weight during a bicep curl:
			Deltoids when holding a handstand in gymnastics:
			Rectus femoris during upwards phase of a squat:

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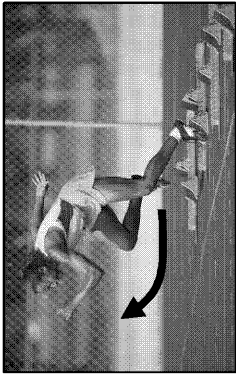


Questions	
Functional Roles of Muscles and Types of Contraction (continued)	A football player is kicking a ball. 1. Analyse the left ankle, knee and hip joint of the footballer during the preparation phase. 

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Questions	
2. Perform a performance analysis for the lower body of a 100 m sprinter as they drive off the starting blocks. Focus on the trailing leg, used to push off from the blocks. 	Joint type: ball-and-socket Articulating bones: pelvic girdle, femur Movement: flexion Agonistic muscle(s): iliopsoas, abdominal muscles Antagonistic muscle(s): gluteus maximus Muscular contraction type of the agonist: isotonic concentric
	Joint type: hinge Articulating bones: femur, tibia Movement: flexion Agonistic muscle(s): hamstrings (biceps femoris) Antagonistic muscle(s): quadriceps (rectus femoris) Muscular contraction type of the agonist: isotonic concentric
	Joint type: hinge Articulating bones: talus, tibia, fibula Movement: dorsi flexion Agonistic muscle(s): tibialis anterior Antagonistic muscle(s): gastrocnemius, soleus Muscular contraction type of the agonist: isotonic concentric

Functional Roles of Muscles and Types of Contraction (continued)

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	Questions	
Skeletal Muscle Contraction	1. What is a motor unit? 2. Label the diagram of a motor unit from 1–9. Give a brief description of the role of each structure in the motor unit	A motor unit is the c by a fibre at a neuro 1. Myelin sheath – 2. Axon – carries a 3. Myofibril – a str 4. Sarcolemma – th 5. Nerve impulse – 6. Motor end plate stimulate a mus 7. Synaptic cleft – 8. Synaptic vesicle ready to be rele 9. Sarcolemma – t

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Questions	
3. How is the motor neuron connected to the muscle fibre?	Via the neuromuscular junction.
4. Explain what is meant by 'action potential'.	Action potential is a rapid change in membrane potential that travels along the axon of a neuron and is transmitted to the muscle fibre.
5. What happens when an action potential reaches the neuromuscular junction?	Neurotransmitters (acetylcholine) are released from the motor end plate.
6. What happens to the muscle cells when depolarisation occurs at the motor end plate?	They contract.
7. What does the 'all-or-none' law state?	A muscle fibre is either fully contracted or not at all.

Skeletal Muscle Contraction
(continued)

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Questions	Fibre Type
Muscle Contraction during Exercise of Different Intensities and during Recovery 1. State the three types of muscle fibre and give five characteristics for each fibre type. (only accept full names, i.e. do not allow 'type I', 'type IIa' and 'type IIb')	Slow oxidative (type I)
	Fast oxidative glycolytic (type IIa)
	Fast glycolytic (type IIb)

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Questions	
2. Give an example of a sport that requires the athlete to use each muscle fibre type.	Slow oxidative (type I):
	Fast oxidative glycolytic (type IIa):
	Fast glycolytic (type IIb):
	Fast glycolytic (type IIb)
3. Exercises that require large amounts of force over a short period of time would recruit which muscle fibre type?	
4. Explain how the size of the motor units influences different activity requirements.	Different motor units are used. For example, a marathon runner uses slow oxidative motor units. These fibres are small and generate low force. Sprinters use fast glycolytic motor units as they are larger and generate high force for athletes requiring lots of power.
5. Put the three fibre types in order of recruitment during exercise.	1. Slow oxidative (type I) 2. Fast oxidative glycolytic (type IIa) 3. Fast glycolytic (type IIb)
6. Different fibre types take varying amounts of time to recover after use. How long do slow oxidative (type I) and fast glycolytic (type IIb) muscle fibres take to fully recover?	Slow oxidative (type I) – 90 seconds Fast glycolytic (type IIb) – 4 to 6 minutes

Muscle Contraction during Exercise of Different Intensities and during Recovery (continued)

1.1b: Cardiovascular and Respiratory Systems

Questions	
1. Define the terms 'heart rate', 'stroke volume' and 'cardiac output'.	Heart rate: the average number of heartbeats per minute
	Stroke volume: the average volume of blood pumped by the heart in one contraction
	Cardiac output: the average volume of blood pumped by the heart in one minute
	Maximal heart rate (HR _{max})
	Cardiac output (ml/min)
2. How is maximal heart rate of an individual estimated?	
3. Write an equation to calculate cardiac output.	
4. Fill in the grid on the right, identifying the correct average resting values for an average untrained individual (heart rate, stroke volume and cardiac output). Would the values increase or decrease in a trained individual?	Variable
	Heart rate
	Cardiac output
	Stroke volume
5. Explain the process of diastole.	Diastole is the heart relaxation phase, during which the heart is not pumping blood or the lungs (oxygenated blood) are not receiving blood. It is aided by the atrioventricular valves closing, preventing backflow of blood from the ventricles into the atria. The atria is higher than the ventricles, so blood can travel into the ventricles.

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Cardiovascular System at Rest (continued)		Questions	
		6. During systole, blood is ejected from the ventricles through which arteries? State where each artery takes the blood.	The aorta takes blood from the left ventricle. The pulmonary artery takes blood from the right ventricle.
		7. Label the diagram of the heart from 1–6.	1. Aorta 2. Pulmonary artery 3. Left atrium 4. Left ventricle 5. Right ventricle 6. Right atrium
		8. The heart is able to self-regulate its beating. Which feature sends out an electrical impulse to stimulate the heart muscle cells?	Sinoatrial node
		9. What does the impulse cause to happen in the atria?	The impulse causes the atria to contract.
		10. Which heart feature does the impulse travel to next? What is its function?	The AV node. The AV node delays the impulse for a short time to allow the atria to contract and push blood into the ventricles before the ventricles contract.

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Cardiovascular System at Rest (continued)		Questions	
		11. Fill in the missing words.	Once the ventricles have contracted, the blood is pumped into the aorta, which separates into left and right branches.
		12. State the effect the Purkinje fibres have on the ventricles.	The Purkinje fibres cause the ventricles to contract, initiating the electrical impulse.
		13. Explain what happens after the electrical impulse has completed its circuit around the heart.	The heart relaxes, filling the ventricles with blood. This is the process of a heartbeat.

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Cardiovascular System during Exercise of Differing Intensities and during Recovery		Questions	
	1.	Describe the effect an increase in exercise intensity has on heart rate.	An increase in exercise intensity
	2.	What is meant by the term 'anticipatory rise'?	The increase in heart rate prior to the anticipation of exercise. It is an anticipatory rise.
	3.	Why does stroke volume increase when exercising?	More blood is needed at the heart during exercise.
	4.	How is stroke volume able to increase during exercise?	- During exercise, the ventricles pump more blood to enter the ventricles, meaning a higher stroke volume. - Increased venous return (preload) leads to an increasing stroke volume.
	5.	Why does stroke volume plateau at approximately 40 % to 60 % of maximal working intensity?	The increased heart rate that occurs during exercise means that the heart does not have enough time (in each beat) for the stroke volume limit will be reached.
	6.	Give a description of cardiac output and how it changes depending on exercise intensity.	Cardiac output is the total amount of blood pumped by the heart. Cardiac output increases and decreases in response to changes in heart rate and stroke volume (encourage students to link cardiac output to heart rate and stroke volume).

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Cardiovascular System during Exercise of Differing Intensities and during Recovery (continued)		Questions	
	7.	Calculate the cardiac output of an athlete exercising at a constant speed on a treadmill. They have an end diastolic volume of 130 ml and an end systolic volume of 50 ml. Their heart rate is 155 bpm. Show your workings.	Stroke volume = end diastolic volume – end systolic volume $= 130 \text{ ml} - 50 \text{ ml}$ $= 80 \text{ ml}$ Cardiac output = heart rate $\times$ stroke volume $= 155 \times 80$ $= 12,400 \text{ ml/min}$
	8.	Explain how the vascular shunt mechanism regulates blood flow depending on exercise intensity.	When exercising, more blood is pumped to the muscles. The body recognises that delivering blood to the muscles is more important than delivering blood to other parts of the body. The body contracts blood vessels in other parts of the body, reducing blood flow needed, and forces the blood into the muscles, causing the widening of the arterioles to increase blood flow.
	9.	Explain the role of the vasomotor centre.	The vasomotor centre (medulla) controls the diameter of the arterioles. Arterioles are connected to the vasomotor centre. The vasomotor centre controls the diameter of the arterioles to either vasoconstrict or vasodilate the arterioles.

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Cardiovascular System during Exercise of Differing Intensities and during Recovery (continued)		Questions	
	10. What role do arterioles and precapillary sphincters play in controlling cardiac output?		Arterioles transport the blood oxygenated blood to the required precapillary sphincters. Blood vasodilation of the precapillary transport blood to the working increasing the diameter of the arterioles to the capillaries. V lowering intensity of exercise) the diameter of the arterioles
	11. Which term is used to describe the body's process of returning blood back to the heart after the blood has been used at the muscle cells?		Venous return
	12. Describe the five mechanisms of venous return.		1. Valves – one-way valves to blood flowing in the opposite direction
			2. Muscle pumps – veins become contracted through vasodilation and contraction
			3. Respiratory pump – breathing creates pressure gradient promoting blood flow
			4. Smooth muscle – muscle contraction
		5. Gravity – aids blood above the heart	

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Cardiovascular System during Exercise of Differing Intensities and during Recovery (continued)		Questions	
13. Explain how venous return differs during exercise (Starling's law) and recovery (blood pooling).			Exercise (Starling's law): • There is an increased stroke volume of the heart. • Before contracting (pumping), the heart contracts and blood to enter before contracting. • An increase in the amount of blood entering the heart.
			Recovery (blood pooling): • Following exercise, there is a pooling of blood (from exercise) back into the heart. • Blood pooling occurs when the heart is not pumping.
			• Increases in temperature and heart rate in order to maintain blood flow. • Venous return will affect the heart rate.
14. Identify and explain the intrinsic factors that regulate heart rate.			During exercise, the long-distance runner's heart rate increases due to hormonal factors. Neural factors also play a role in regulating heart rate. During exercise, blood pressure increases, which leads to an increase in heart rate. The heart rate also increases due to the musculoskeletal system; they are proprioceptors respectively and impulses to either increase or decrease heart rate (decrease) in heart rate.
			During exercise, the long-distance runner's heart rate increases due to hormonal factors. Neural factors also play a role in regulating heart rate. During exercise, blood pressure increases, which leads to an increase in heart rate. The heart rate also increases due to the musculoskeletal system; they are proprioceptors respectively and impulses to either increase or decrease heart rate (decrease) in heart rate.
15. Describe and explain how the heart rate of a long-distance runner is regulated by neural factors during competition.			During exercise, the long-distance runner's heart rate increases due to hormonal factors. Neural factors also play a role in regulating heart rate. During exercise, blood pressure increases, which leads to an increase in heart rate. The heart rate also increases due to the musculoskeletal system; they are proprioceptors respectively and impulses to either increase or decrease heart rate (decrease) in heart rate.
			During exercise, the long-distance runner's heart rate increases due to hormonal factors. Neural factors also play a role in regulating heart rate. During exercise, blood pressure increases, which leads to an increase in heart rate. The heart rate also increases due to the musculoskeletal system; they are proprioceptors respectively and impulses to either increase or decrease heart rate (decrease) in heart rate.

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Questions	
	16. Describe and explain how the heart rate of a basketball player is regulated by hormonal factors before and during competition.
	17. How is heart rate regulated during a cool-down / recovery following competition?

Cardiovascular System during Exercise of Differing Intensities and during Recovery (continued)

Two hormones are released by the basketball player changes their activity level. Adrenaline stimulates the sinoatrial node, which is normally released prior to exercise. Noradrenaline can also be released during a match, which spots an opportunity to make a difference. Noradrenaline also increases heart rate in situations; for example, the player's heart rate increases in seconds of the match.

During a cool-down/recovery, the heart rate decreases. The hormone adrenaline is sent by the electrical impulses are sent by the heart.

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Respiratory System at Rest		Questions		
	1. Name and describe the two main functions of the respiratory system.	1. Pulmonary ventilation – the movement of air in and out of the lungs		
		2. Gaseous exchange – (i) exchange of gases between the lungs and the blood, (ii) exchange of gases between the blood and the body cells		
	2. Define the terms ‘breathing frequency’ and ‘tidal volume’.	Breathing frequency: the number of breaths taken per minute		the number of breaths taken per minute
		Tidal volume: the volume of air inhaled or exhaled during a single breath		the volume of air inhaled or exhaled during a single breath
	3. Write an equation to calculate minute ventilation.	Minute ventilation (l/min) = breathing frequency × tidal volume		
	4. Fill in the grid on the right, identifying the correct average resting values for each variable (breathing frequency, tidal volume and minute ventilation) for an untrained athlete. State whether the variable would increase or decrease for a trained individual.	Variable		
Breathing frequency				
Minute ventilation				
Tidal volume				

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	Questions	
Respiratory System at Rest (continued)	5. Describe what happens to the diaphragm and external intercostal muscles during inspiration and expiration at rest.	
		Diaphragm:
		External intercostal muscles:
		Diaphragm:
		External intercostal muscles:
	6. Give a definition of 'diffusion'.	Diffusion is the movement of concentration.
	7. How does gaseous exchange take place in the alveoli?	Alveoli of the lungs have a high concentration of carbon dioxide in the alveoli's surrounding capillaries.

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	Questions	
Respiratory System at Rest (continued)	8. Which physiological factors aid gaseous exchange between the alveoli and capillaries?	• Large numbers of alveoli • Large capillary network in thin, slowing the movement • Thin membrane between
	9. Explain how gaseous exchange takes place at the muscles, and what factors aid the exchange.	Diffusion of oxygen takes place at a high concentration of oxygen. Capillaries are close to the muscle, and a large area for diffusion.

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Respiratory System during Exercise		Questions	
1. State the average resting values of breathing frequency in untrained individuals at rest, during moderate-intensity exercise and during high-intensity exercise.	At rest		
	Moderate-intensity exercise		
	High-intensity exercise		
2. Explain the changes in tidal volume as an athlete continually increases exercise intensity towards exhaustion, such as when completing the NCF multistage fitness test.			- Tidal volume will increase - During submaximal exercise intensity (up to 2000 ml/min) - After tidal volume reaches a plateau is because, as breathing rate increases, maximally inspire and expire - Average tidal volume rest - Average moderate intensity
		3. Describe the difference between minute ventilation during light-intensity exercise and maximal-intensity exercise and explain why this difference occurs.	- Minute ventilation is much higher during exercise (9–10 l/min more than light intensity) - Significant change between light and maximal intensity is due to the increased demand for oxygen and the removal of carbon dioxide from the body. - Minute ventilation increases during exercise (minute ventilation)

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Questions	
	Inspiration • Sternocleidomastoid – neck muscles contract, therefore the ribcage and, therefore, lowers its pressure gradient in the lungs. • Pectoralis minor – helps to pull the ribcage up and forward. Expiration • Internal intercostals – only the external intercostals contract, therefore the internal intercostals bring the ribs inward, decreasing its pressure, expelling air from the lungs into the atmosphere. • Rectus abdominus – contracts, pushing the abdominal contents down, increasing thoracic pressure and, therefore, expelling air from the lungs into the atmosphere.
	4. Name and describe the role of the muscles that support the mechanics of inspiration and expiration during exercise.
	5. Found in the medulla oblongata, what is the name given to the area of the brain that regulates respiration?
	6. What are the names of the two subsections of this area (identified in Q5)? Outline their roles.

Respiratory System during Exercise (continued)

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Respiratory System during Exercise (continued)		Questions	
	7.	Explain how chemical control regulates breathing as we begin to exercise.	Changes in blood acidity due to muscles) are identified by the ICC responds by increasing breathing rate.
	8.	How does neural control help to regulate breathing rate during exercise?	1. Thermoreceptors detect breathing rate. 2. Proprioceptors detect mechanical stimulation to stimulate the RCC. 3. As the lungs inflate – or ‘squeeze’ – ECC to begin the process
	9.	How would a higher-intensity exercise affect the pressure gradient between the alveoli and the blood?	Gaseous exchange diffuses oxygen (capillaries/bloodstream) from the blood into the tissues. As intensity increases, oxygen level gradient.
	10.	Explain the process of oxygen dissociation from haemoglobin.	In areas where the partial pressure of oxygen is lower, haemoglobin has a greater affinity for oxygen. More oxygen is released from the haemoglobin into the surrounding tissues. For example, in an area of low oxygen, tissues have a higher requirement for oxygen.

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Respiratory System during Exercise (continued)		Questions	
	11. A graph of oxygen saturation of the haemoglobin at rest and during recovery would show a shift of direction of the graph curve. In which direction does the shift occur and what is this called?		Shift to the right = Bohr shift
	12. Draw an approximate graph to show this shift. Remember to label your axes correctly.		
	13. What are the factors that influence the change in oxygen saturation of haemoglobin, causing the shift?		• Temperature • Carbon dioxide • Lactic acid (low pH levels)

1.2a: Diet and Nutrition and their Effect on Physical Activity and Performance

Diet and Nutrition		Questions	
	1. Name the seven components of a healthy, balanced diet.	1. Carbohydrates	
		2. Proteins	
	3. Fats		
	4. Minerals		
	5. Vitamins		
	6. Fibre		
	7. Water		
	2. Provide the functions of each of the specified macronutrients in a balanced, healthy diet.	1. Carbohydrates:	Provide can be b
		2. Proteins:	Primary source o
		3. Fats:	Provide activities glycoger
		4. Fibre:	Aids in d

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Questions	
3. Provide the functions of each of the specified micronutrients in a balanced, healthy diet.	1. Minerals: Provide minerals sodium (impulses to be ab
	2. Vitamins: Benefits used to prevent vitamins
	Water is key to performance to n water loss through sweating and
	Dietary Component
	Fibre
4. What is the role of water in a balanced, healthy lifestyle of an athlete?	Proteins
	Carbohydrates
	Minerals
	Fats
	Vitamins
5. Fill in the missing dietary components, matching them to the correct food source.	

Diet and Nutrition (continued)

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Questions		
6. What is the recommended energy intake for men and women?	Men:	2500 kcal
	Women:	2000 kcal
7. Athletes need to monitor their energy intake and energy expenditure. Give a sporting example of an athlete who requires greater energy expenditure than energy intake, and an example of an athlete who requires greater energy intake than energy expenditure. Give reasons for both.	Greater energy expenditure, decreased energy intake, e.g. martial arts, boxing, jockey / horse racing. Greater energy intake, decreased energy expenditure, e.g. weightlifting, rugby. Greater energy intake, decreased energy expenditure, e.g. weightlifting, rugby. Greater energy intake, decreased energy expenditure, e.g. weightlifting, rugby.	
	Greater energy expenditure, decreased energy intake, e.g. martial arts, boxing, jockey / horse racing. Greater energy intake, decreased energy expenditure, e.g. weightlifting, rugby. Greater energy intake, decreased energy expenditure, e.g. weightlifting, rugby.	
8. Explain why an athlete who wants to gain weight must maintain a balanced diet to achieve their weight goals.	To gain weight, athletes must maintain a balanced diet and gain the benefits of each dietary component. To lose weight, athletes must consume just fats to gain weight and dietary components should still be consumed. To maintain weight, athletes should maintain a balanced diet and gain the benefits of each dietary component. To gain weight, athletes must maintain a balanced diet and gain the benefits of each dietary component. To lose weight, athletes must consume just fats to gain weight and dietary components should still be consumed. To maintain weight, athletes should maintain a balanced diet and gain the benefits of each dietary component.	

Diet and Nutrition (continued)

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Ergogenic Aids		Questions
1. Give a definition of 'ergogenic aids'.	Ergogenic aids are substances or treatments that enhance physiological or mental performance.	
		1. Aid: Anabolic steroids Benefits: Stimulate protein synthesis, leading to faster recovery from high-intensity training. Risks: Moods swings / testosterone suppression Legal status in sport: Illegal
		2. Aid: Human growth hormone (HGH) Benefits: Stimulates naturally occurring growth hormone synthesis. Increases cardiac output. Risks: Increased risk of heart disease (e.g. large hands/jawline) Legal status in sport: Illegal
2. Name three examples of pharmacological aids used to aid performance. Outline their beneficial physiological effects on the body, potential risks and state the legality of each substance.		3. Aid: Erythropoietin (EPO) Benefits: Stimulates red blood cell production. As such, more oxygen can be carried to muscles. Risks: Increased viscosity of the blood, leading to heart attacks Legal status in sport: Illegal

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Ergogenic Aids (continued)		Questions	
	3.	With examples, explain how cooling aids help an athlete.	Cooling aids help to maintain or change body temperature. For example, ice baths can be used to cool the body down to aid recovery of the muscles. When an athlete is cooled down, they can be used to reduce body temperature.
	4.	Blood doping is an illegal ergogenic aid. Outline the process of blood doping.	Blood is taken from an athlete and frozen. Those lost (returning red blood cells) are then injected back into their system. Blood doping is injected into the athlete to increase oxygen carrying capacity.
	5.	State the benefits of blood doping for an athlete.	Blood doping aims to increase aerobic capacity by increasing the number of red blood cells to carry oxygen to the working muscles.
	6.	What are the risks associated with blood doping?	Blood doping increases the risks of blood clots and infection. There is also a risk of infection from the needle used to inject the blood.
	7.	State an alternative method of legally increasing red blood cell count in the body. Briefly describe how this process works.	Intermittent hypoxic training (IHT) is a method of training in an environment with low oxygen levels. This stimulates the body to produce more red blood cells and increase oxygen carrying capacity.

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Ergogenic Aids (continued)	Questions	
	8. Describe how a boxer would control the amount and type of food consumed in their diet <i>before</i> , <i>during</i> and <i>after</i> an event.	Before event:
		• In the days leading up to the event ensure they stay hydrated and primarily consume carbohydrates • After the weigh-in, increase their fluid intake to maintain strength and performance • On the day of the event, consume a small meal prior to the event
		During event:
		May consume carbohydrates and electrolyte levels to prevent discomfort by eating small meals
		Post-event:
		• Immediately after the event, consume carbohydrates and fluids to aid recovery • To aid recovery, consume a meal within 30 minutes of the event

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Ergogenic Aids (continued)		Questions
	9. Explain the difference between hypotonic, isotonic and hypertonic drinks.	Hypotonic drinks are primarily used ingesting electrolytes and glucose. event (e.g. long-distance running). by the body to replace that lost during levels. Hypertonic drinks are used post-event. They are not designed to be used as a replacement for water. They can cause dehydration in high doses.
	10. Give examples of drinks that should be used to hydrate someone during exercise.	Water and isotonic drinks.
	11. Which fluids can have a negative impact on performance, and why?	Diuretic drinks, such as highly caffeinated drinks, should be avoided due to the increased urine output.
	12. Provide a timeline and plan for an athlete wanting to complete carbohydrate loading in the week prior to an endurance event.	• 7 days before event: endurance training • 6–4 days prior to event: athlete should continue at a similar intensity • 3–4 days prior to event: carbohydrate loading. Fatty foods should be replaced with carbohydrates.
	13. What is a risk associated with carbohydrate loading?	• Digestive problems • Bloating

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Ergogenic Aids (continued)		Questions	
	14. What kinds of athletes are likely to use creatine as a nutritional supplement? Give a sporting example.	Athletes that require high levels of power and speed Creatine to supplement weight training (or other suitable examples)	
	15. Why would an athlete use nitrate as a nutritional supplement? What potential side effects can arise?	Nitrate increases the body's levels of blood flow, allowing more blood, and, therefore, more oxygen to the muscles. Nitrate can cause headaches and dizziness.	
	16. What are the benefits of consuming caffeine before an event? What side effects can be caused by caffeine consumption?	Benefits:	increased alertness
		Side effects:	dehydration/diuretic
	17. Why is bicarbonate commonly used by athletes who compete in anaerobic events?	Bicarbonate acts as a buffer to lactic acid. Anaerobic exercises can be performed for short periods of time and are controlled.	

1.2b: Preparation and Training Methods in Relation to Improving and Maintaining Physical Activity and Fitness

Aerobic Training		Questions
	1. Define 'aerobic capacity'.	Aerobic capacity is the ability to sustain a given level of aerobic work for a prolonged period of time.
	2. Define 'VO ₂ max'.	VO ₂ max is the maximal volume of oxygen consumed per minute.
	3. State three physiological features of an individual with a high VO ₂ max.	Any three of the following: • high capillary density • high proportion of slow-twitch muscle fibres • lower body fat percentage • higher levels of oxidative enzymes • greater cardiac output • large lung volume • large red blood cell count • strong respiratory muscles • and rectus abdominus
	4. Explain how an athlete can adapt their training type and intensities to improve VO ₂ max.	Training should be primarily aerobic. VO ₂ max produces a greater percentage of total energy output.
	5. What is the relationship between age and VO ₂ max?	VO ₂ max decreases proportionally with the elasticity of the cardiac muscle.
	6. What is the general difference between male and females' VO ₂ max? Why is this?	Generally, males have greater VO ₂ max than females, in part due to larger hearts and lungs.
	7. What is the most accurate method of determining someone's VO ₂ max?	Direct gas analysis – the collection and measurement of oxygen and carbon dioxide inspired and expired.

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Aerobic Training (continued)		Questions	
	8.	Name and briefly describe three methods that <i>estimate</i> an individual's VO_2 max.	- NCF multistage fitness (distance) following a step test (heart rate and rate of recovery decreases at different rates when they can no longer keep up) - Queen's College step test (3 minutes. A metronome is used to maintain a heart rate and rate of recovery of 150 beats per minute) - Cooper 12-minute run (distance that they cover in 12 minutes)
	9.	Which tests are cheap to administer, allow many people to participate at one time, and require minimal equipment?	- Cooper 12-minute run - Queen's College step test - NCF multistage fitness
	10.	Give one disadvantage of each of the four tests of cardiovascular fitness.	1. Cooper 12-minute run
			2. Queen's College step test
			3. NCF Multistage fitness test
			4. Direct gas analysis

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Questions	
Aerobic Training (continued)	11. Define 'continuous training' and 'high-intensity interval training' (HIIT).
	Continuous training: Trai
	HIIT: Trai rest
	Continuous training: Inte hear dura
	HIIT: Inte invc wor
12. Identify the intensity and duration of continuous running and HIIT.	Duration of the interval ses at. There could be an incre repetitions. The recovery in
13. Describe how a HIIT training session could be adapted to improve anaerobic fitness.	A heart rate monitor attach of the athlete. A trainer can certain intensities (i.e. calcul athlete is training up to tha
14. How would a trainer ensure an athlete is working at a specific intensity using a heart rate monitor?	Maximum heart rate = 220
15. How is maximum heart rate calculated?	

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Aerobic Training (continued)	Questions	
	16. Describe the cardiovascular and respiratory adaptations from training aerobically.	Cardiovascular • Decreased resting heart rate • Increased blood volume • Increased haemoglobin • Increased oxygen carrying capacity • Increased number of capillaries • Cardiac hypertrophy – increased stroke volume • Increased blood volume • Increased maximal cardiac output Respiratory • Increased efficiency of gas exchange • Increased lung volume • Increased surface area for gas exchange • Increased strength of respiratory muscles

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Aerobic Training (continued)	Questions	
	17. Describe the muscular and metabolic changes that occur due to training aerobically.	Muscular • Increased number of capillaries as there is a greater exchange of blood • Increased size of slow-twitch muscle fibres • Increased strength of tendons and ligaments • Increased myoglobin content
		Metabolic • Improves ability of body to use oxygen • Increased number of mitochondria • Increased number and size of capillaries
	18. Identify three sports where aerobic capacity is a key fitness component.	Accept any suitable answer • Marathon running • Road cycling • Long-distance rowing • Long-distance swimming • Games (e.g. hockey, football)

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Questions	
1. Define the five types of strength.	1. Strength endurance The ability of
	2. Maximum strength The maximum contraction.
	3. Explosive strength / elastic strength The ability of possible.
	4. Static strength The amount c remains unch
	5. Dynamic strength Strength gene the muscle (is
2. Explain how fibre type affects strength.	Different fibre types are more suited to dif endurance events and so are a key compo produce greater forces more rapidly and s because fast glycolytic fibres have larger m
	3. How does the cross-sectional area of a muscle affect strength? The cross-sectional area (size) of a muscle can produce, i.e. if training increases the c can be produced by that muscle cell.

Strength Training

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Questions	
4. Fill in each gap with the correct type of strength test to match the strength variable it is measuring. 5. Give one disadvantage for each of the strength tests identified in the previous question.	1. <u>Grip strength dynamometry</u> is used to grip with. 2. One <u>repetition maximum</u> is used to m of muscles. 3. <u>Strength endurance</u> can be tested using 4. A <u>vertical jump test</u> measures the power
	1. Grip strength dynamometry • Not sport specific • Only forearm strength assessed 2. One repetition maximum • Good technique essential • Cannot isolate individual muscles • Trial and error required to determine • Risk of injury 3. Press-up test or sit-up test • Not sport specific • Not an accurate method of measuring 4. Vertical jump test • Cannot isolate individual muscles • Only provides an estimate of power
6. What is meant by 'one repetition maximum' (1RM)?	The amount of weight that can be lifted in

Strength Training (continued)

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Questions	
7. Define the terms 'repetitions' and 'sets' with respect to strength training.	Repetitions: Repetitions are the number usually consists of lifting weight
	Sets: A set consists of a predetermined number of repetitions
8. Complete the table of guidelines outlining the resistance suggestions for each type of strength.	Type of Strength
	% 1RM
	Strength endurance
	50–75 %
	Maximum strength
	85–95 %
	Explosive/elastic strength
	75–85 %
9. Why is a multigym useful in training strength? Provide one disadvantage of a multigym.	A multigym is able to target a variety of muscle groups and provides a variety of strength types – providing a full-body workout are not often sport specific.

Strength Training (continued)

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Strength Training (continued)		Questions	
	10. Explain how plyometrics are used to train explosive strength?	Plyometrics train explosive strength by per three stages of the stretch-shortening cycle: time between eccentric and concentric) and During the eccentric phase, energy is stored in the concentric phase, the stored elastic energy is released during the concentric phase, the time between these phases (the amortisation phase) is	Plyometrics train explosive strength by per three stages of the stretch-shortening cycle: time between eccentric and concentric) and During the eccentric phase, energy is stored in the concentric phase, the stored elastic energy is released during the concentric phase, the time between these phases (the amortisation phase) is
	11. Give three sports or athletes that plyometrics would be beneficial to.	Accept any suitable answers – sports that include plyometrics • Rugby • Sprinters • Tennis • Games (e.g. hockey or football) • Basketball • Jumping events (long/high jump)	Accept any suitable answers – sports that include plyometrics • Rugby • Sprinters • Tennis • Games (e.g. hockey or football) • Basketball • Jumping events (long/high jump)
	12. Give one risk associated with plyometric training.		Risk of injury is high due to the sudden contraction of muscles during the eccentric phase of the stretch-shortening cycle.
	13. Why is circuit training and interval training beneficial in strength training?		Circuit training provides the opportunity to have different muscle groups working at different intensities. Interval training ensures different muscle groups are working at different intensities.
	14. Provide two benefits to a hockey player that circuit training can have if planned effectively.		Any of the following: • Can be adapted to work on relevant types of skills in hockey. • Whole team can participate, even with individual players. • Can include sport-specific skills such as agility, speed, and endurance.

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Questions	
15. Describe the adaptations of the muscles as a result of strength training.	Hypertrophy of the muscles is the primary increased size of the fast-twitch muscle fibres and PC (Phosphocreatine) stores increase, There is also an increased number of muscle mitochondria.
16. Describe the adaptations that occur to the connective tissues as a result of strength training.	There is an overall increase in the strength of the connective tissues, ligaments and joints become more stable and have greater range of motion.
17. What are the neural effects of strength training?	Strength training leads to higher levels of recruitment of motor units. Synchronisation of a greater number of motor units. Increased inhibition of the stretch reflex (withdrawal reflex).
18. How does strength training affect metabolic processes in the cells?	Strength training increases the tolerance of the cells to lactic acid, allowing high-intensity activities to be performed for longer. There is also an increase in ATP-PC stores and mitochondrial density.
19. Name a sporting example or activity for each strength type of which the strength type is a key component to success.	1. Strength endurance
	2. Maximum strength
	3. Explosive strength / elastic strength
	4. Static strength
	5. Dynamic strength

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Flexibility Training		Questions	
	1.	Why is flexibility important to an athlete?	Flexibility helps to reduce the risk of result, there is an increased range of causes of injuries such as overstretch
	2.	Name a sport that requires good flexibility to perform, and justify your choice.	Gymnastics – good flexibility is needed by the body to change shape and position. (or other appropriate answer)
	3.	Name and describe the two types of flexibility.	1. Static – the range of motion when an athlete is performing the stretch without any external source to help with the movement. 2. Dynamic – the level of flexibility of movement, e.g. the flexibility of the air.

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Flexibility Training (continued)		Questions	
	4.	Explain how joint type affects the flexibility of a movement.	Different types of joints have different ranges of motion. A hinge joint, such as the knee or elbow, allows movement in one direction. A ball-and-socket joint, however, such as the hip, allows movement in many directions, allowing greater flexibility than other joint types.
	5.	Why does the length of a joint's surrounding connective tissue affect flexibility?	Connective tissues (ligaments and tendons) surround the joint, providing resistance to movement and so have an effect on flexibility.
	6.	How does flexibility change with age and gender?	Age: As age increases, fibrous connective tissue becomes more resistant to stretching.
			Gender: Generally, women have greater flexibility than men due to differences in the structure of the spine and ligaments.
	7.	Provide two tests that can be used to assess flexibility and explain how the tests are completed.	1. Sit-and-reach test – a person sits on the floor with legs straight out in front of them. They reach forward with their arms extended, trying to touch their toes. The distance from the floor to the fingertips is measured. 2. Goniometer – a device that measures the angle of a joint. It is used to measure the range of motion at a joint by placing the device over the joint and measuring the angle between two bones.

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Flexibility Training (continued)		Questions	
	8. Provide two advantages of the two tests of flexibility.	1. Goniometry - Valid measure of flexibility - Can be adapted to be sport	
	9. Provide two disadvantages of the two tests of flexibility.	1. Goniometry - Axis of rotation is difficult to - Training required	
	10. Describe the difference between dynamic, passive and active stretching.	Dynamic stretching requires an athlete to stretch muscles to the limit of their range of motion. Passive stretching is stretching using an external force to stretch the athlete into the correct stretching position that are otherwise impossible without active stretching. Active stretching requires the athlete to hold the stretch for a period of time in the correct position, and hold the stretch for a period of time.	

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Flexibility Training (continued)		Questions	
	11. Which method of flexibility training is being described below? <i>The target muscle should not change in length, it should be tensed – or contracted – against an immovable object, such as a wall.</i>		Isometric stretching
	12. Evaluate the use of ballistic stretching. What are its positives and negatives?		Ballistic stretching is the use of fast range of movement. Ballistic stretching is not recommended for most people. However, this type of stretching is often used by athletes. It is, therefore, useful for movements in their sport. It is, however, dangerous as it puts unnecessary stress on the muscles (such as weightlifters) as it puts unnecessary stress on the muscles, leading to injury as it becomes easier to overstretch due to the momentum of the movement.
	13. Describe what proprioceptive neuromuscular facilitation (PNF) is and explain how the process is completed.		Proprioceptive neuromuscular facilitation (PNF) is a stretching technique that involves contracting the muscle being stretched against resistance, then relaxing it and stretching it further. PNF is carried out by passively stretching the muscle, then contracting it against the limb. Passive stretching is further than the original active stretch.

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	Questions	
Flexibility Training (continued)	14. Identify the stretching type each of the following athletes would benefit from.	1. A ballet dancer looking to maintain
		2. An athlete recovering from an injury
		3. An athlete warming up prior to competition
		4. An elite gymnast preparing to perform
		5. A rugby player training to develop
	15. Think about the range of flexibility training available to athletes. How does training physiologically change the athlete?	• Increased range of movement • Synovial fluid production maintained • Muscles and connective tissues strengthened • Increased muscle length • Increased inhibition of the stretch reflex

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Periodisation of Training		Questions
1.	Name and describe the three cycles of periodisation. How are they linked?	- A macrocycle is a large amount of time with of numerous mesocycles. - A mesocycle is typically a month long and c months. A mesocycle is made up of microc - Microcycles are typically one week long and
	2. Apply the three periodisation cycles to a long-distance road cyclist.	The cyclist's macrocycle would be for the cyclist year. The cyclist's macrocycle would be made u four key elements of a race (endurance, strengt would consist of four microcycles which are eac aspect. For example, week one of mesocycle or
	3. Name and describe the three phases of training.	1. Preparatory phase – commonly 'preseason' following a rest period to that of competitiv 2. Competitive phase – commonly competitive their performance levels throughout the lei 3. Transition phase – follows the competitive leads back to the preparatory phase.
	4. Why are phases of training becoming increasingly important?	As more sports become professional, many of ti performance and fitness for longer periods of ti gradually get back to peak performance levels f performance over a number of months until the

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Periodisation of Training (continued)		Questions	Answers
	5. Describe the concept of tapering.	Tapering reduces the volume of training a few weeks before the competition during training.	Answers should discuss the learnt topics: periodisation, tapering and preparatory phase. Example answer: In the year leading up to the Olympics, a 100 m sprinter would use the following principles of periodisation. The macrocycle would be 12 months, with the end goal of winning the Olympic events. The mesocycle would be 12 months, making up 12 months of training a different aspect of their events. For example, the first 4 months would be focused on building key to their performance. In month (mesocycle) 5-8 would be focused on building technique, turning the blocks). Each factor is focused on for one week of periodisation. The earlier months of the periodisation make up the preparatory phase, where the athlete back up to peak physical condition following the preparatory phase. The athlete enters the competitive phase of the year with 'practice' competitions (e.g. national level competitions). Performance is aimed to be maintained throughout the Olympic finals. Approximately three weeks before the competition, tapering, which decreases the amount of training volume, is used when they do train. This allows the athlete to maintain their fitness while resting and recovering more easily in the lead up to the competition. The preparatory phase precedes the preparatory phase.
	6. Using a sporting example, create a fitness plan based on the concepts of periodisation of training.		

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Impact of Training on Lifestyle Disease		Questions	
	1.	What is atherosclerosis?	Atherosclerosis is the clogging of arteries. Arteries to harden.
	2.	What is the difference between a stroke and a heart attack?	A stroke is the blocking of a cerebral artery. A heart attack is the blocking of the coronary arteries.
	3.	Identify and explain the effects of regular training on the risk of cardiovascular disease.	- Regular training increases stroke volume. - Overall increase in health of the heart. - Atherosclerosis, strokes and heart attacks leading to each of these diseases, such as heart failure. - Training helps to control blood pressure (HDL) to low-density lipoproteins (LDL) decreasing blood pressure. LDL activity. - Generally, training reduces body fat cardiovascular disease.
	4.	Describe what asthma and chronic obstructive pulmonary disease (COPD) are.	Asthma – spasms in the bronchi or restriction of airflow. COPD – a broad term for a number of respiratory diseases.
	5.	Identify and explain the effects of regular training on the risk of respiratory diseases.	Training increases the output of the respiratory system in terms of inhalation and exhalation. It also increases the efficiency of the respiratory system at the locations of gaseous exchange, mitochondria, and replaces it with large amounts of carbon dioxide and replaces it with large amounts of oxygen, increasing the endurance ability of the body to resist obstructive pulmonary disease (COPD).

1.3a: Biomechanical Principles, Levers and the

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Biomechanical Principles		Questions		
		1. Define Newton's first law of motion and give a sporting example of it in use.	Definition:	The law of inertia: a of constant velocity,
			Sporting example:	A golf ball on a tee v (accept suitable spo
		2. Define Newton's second law of motion and give a sporting example of it in use.	Definition:	The law of accelerat force applied to it a
			Sporting example:	A golf ball being stru direction the golf cl The harder the ball i (accept suitable spo
		3. Define Newton's third law of motion and give a sporting example of it in use.	Definition:	The law of reaction:
			Sporting example:	During a gymnastics enough force to jum force back in the dir (accept suitable spo

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Biomechanical Principles (continued)		Questions	
	4.	Calculate the force needed to accelerate a 0.5 kg mass by 50 m/s. Show your calculations.	Force (N) = mass (kg) × acceleration (ms ⁻²) Force = 0.5 kg × 50 ms ⁻² Force = 25 N
	5.	Define 'net force'.	Net force is the sum of all forces acting on
	6.	During a scrum in rugby, neither team has an advantage over the other. They are creating a balanced force. Draw two arrows on the diagram to represent the balanced force.	Arrows should be equal in length and thick directly opposite each other. 

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	Questions	
Biomechanical Principles (continued)	7. Another scrum occurs in the match and one team creates an unbalanced force in the scrum, forcing their opponents backwards. Draw two arrows to represent this unbalanced force.	One arrow should be noticeably larger than the other. The two arrows are acting directly opposite each other. 
	8. Define the term 'weight'.	Weight is the effect gravity has on the mass of an object. Also accept: Weight (N) = mass (kg) × acceleration due to gravity (m/s²) Students must clearly differentiate between mass and weight. Mass is measured in kilograms, weight is measured in Newtons.

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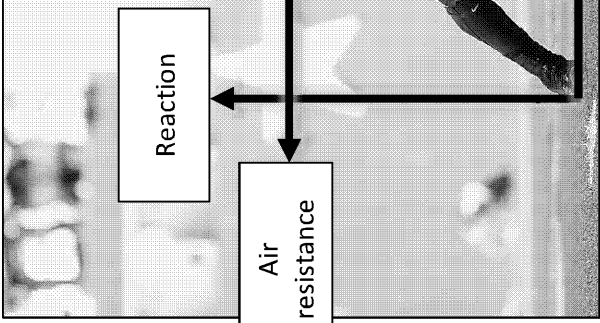
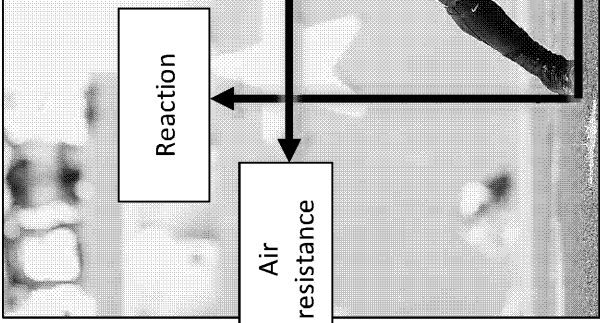


Biomechanical Principles (continued)		Questions	
	9. An athlete is completing a vertical jump test. Newton's third law states that for every action there is an opposite and equal reaction. What changes in force must the athlete complete to move in an upwards direction?		The athlete must produce an upwards force (mass $\times$ gravity). For example, if gravity acts downwards, the athlete must create an upwards force greater than gravity.
	10. Explain the importance of friction using sporting examples.		Friction occurs between any two objects in contact. For an athlete to move, there must be established to optimise performance. Friction is needed between the track and the wheel of a bicycle to maintain momentum. Maintaining enough grip to remain on the track is essential for athletes. Tyres in contact with the track and having a tread pattern to increase friction. In sports such as football, a much higher level of friction is needed between the player and the ground. This is achieved by using studs on the sole of the boot.
	11. Define 'air resistance' and state the factors that affect air resistance.	Definition: Factors affecting air resistance:	Air resistance is the force that opposes the motion of an object through the air. Velocity of the object. Cross-sectional area of the object.

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Biomechanical Principles (continued)	Questions	In track cycling, many factors of air resistance of a cyclist is hard to control as the aim is to preserve energy – both cyclists are travelling a large amount of air resistance, the rear cyclist (as helmets) are streamlined as much as possible also be made of smooth materials, to reduce air resistance. Bicycles are also minimised in surface area and larger objects.
	12. Explain how air resistance can be manipulated by a track cyclist to increase their performance.	
	13. Complete the free body diagram of an American football player by drawing and labelling the vertical and horizontal forces.	

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Biomechanical Principles (continued)		Questions	
	14. Write an equation to represent Newton's second law of motion.		Force (N) = mass (kg) × acceleration (m s^{-2})
	15. Determine the acceleration of a tennis racquet if the racquet has a mass of 0.3 kg and is swung with a force of 6 N. Show your calculations.		Force (N) = mass (kg) × acceleration (m s^{-2}) Therefore Acceleration (m s^{-2}) = Force (N) ÷ Mass (kg) Acceleration (m s^{-2}) = $6 \div 0.3$ Acceleration = 20 m s^{-2}
	16. Calculate the momentum of a tennis racquet with a mass of 0.6 kg, moving at a velocity of 15 m/s.		Momentum (kg m/s) = mass (kg) × velocity Therefore Momentum (kg m/s) = 0.6×15 Momentum = 9 kg m/s
	17. Define 'the centre of mass'.		The centre of mass is the point in or around

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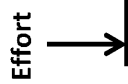


Biomechanical Principles (continued)	Questions	
	18. Explain the factors that affect the position of the centre of mass.	The centre of mass (CoM) is the location at which the mass of an object is concentrated. As such, CoM can be changed through a change in shape to change the location of the CoM (e.g., a person leaning back). CoM outside of their own body due to the location of the mass (e.g., a person leaning back). Mass of an object (and the location of the mass) has a greater mass around their stomach, which is lower than the rest of the body.
	19. Explain why a skier would bend their knees to become more stable.	• Centre of mass (CoM) is related to the location of the mass. If the CoM is inside the base of support, the body is stable. • Objects with a lower CoM are more stable. • By bending their knees, the skier lowers their CoM. • Bending the knees helps to widen the base of support. • A combination of a lower CoM and a wider base of support increases stability.

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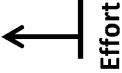
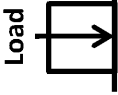


Questions		Levers		
1. Define the terms 'load', 'effort', 'fulcrum', 'effort arm' and 'load arm'.	Load:	a weight that needs to be moved		
	Effort:	the force required to move the load		
	Fulcrum:	the point around which the lever pivots		
	Effort arm:	the distance from the fulcrum to the effort		
	Load arm:	the distance from the fulcrum to the load		
	First-class Lever System:			
2. Draw simple diagrams of first-, second- and third-class lever systems. Give a sporting example of the lever in work.				
	Sporting example:	extension blocks		

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	Questions	
Levers (continued)	2. Draw simple diagrams of first-, second- and third-class lever systems. Give a sporting example of the lever in work. <i>(continued)</i>	Second-class Lever System: 
		Sporting example: a rugby player
		Third-class Lever System: 
		Sporting example: flexion of the elbow during a throw

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Levers (continued)	Questions	
	3. How is a second-class lever advantageous over first- and third-class levers?	Second-class levers allow large movements while producing a large force. This can produce a longer effort arm than the load arm, but this occurs at the expense of speed.
	4. Give a sporting example of a third-class lever system. Identify the load, effort and fulcrum.	(accept any appropriate example) Third-class lever system: Bicep curl Load = dumb-bell Effort = biceps brachii Fulcrum = elbow joint

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Biomechanical Analysis using Technology		Questions	
	1. Define the terms 'kinematics' and 'kinetics'. 2. How can kinematics be used to describe the movement of the leg? Give examples of how limb kinematics can be quantified. 3. Give an example of an athlete who would be concerned with limb kinematics. 4. Explain what force plates are. Give examples of types of sporting activities that would be useful to complete on a force plate.	Kinematics:	Kinematics is the study of describing the motion of objects.
		Kinetics:	Kinetics is the study of the use of forces.
		Limb kinematics is the study of the positions and subsequent movement of limbs and subsequent movement technology such as high speed cameras.	
		(accept any suitable answer) e.g. 100 m sprinter – limb kinematics Freestyle swimmer – limb kinematics	
		Force plates are pieces of technology that are used to measure the force that is being pushed back to the ground (they are applied to the ground). They can be used in many directions. Force plates can be used in many sporting movements. For example, they can be used to analyse lower limbs during a maximal effort jump. They can also be used to analyse walking gaits and lower limb movements.	

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Biomechanical Analysis using Technology (continued)		Questions	
		5. Explain what wind tunnels are used for.	Wind tunnels are used to assess movement. Wind tunnels can show speeds, object positions and shape or body needs to be changed to k
		6. Name a sport that would use wind tunnels to optimise performance.	Correct sporting examples are the e.g. Motor racing (air flow over v resistance down the slope)

2.1: Skill Acquisition

Classification of Skills		Questions	
	1. Name the six skill continuas.	1. Difficulty	
		2. Environmental	
		3. Pacing	
	2. Which continuum do <i>simple</i> and <i>complex</i> belong to? Define the two ends of the continuum.	Continuum:	Difficulty
		Simple:	Transfer ranked low
		Complex:	Skills that being con good con
	3. Which continuum do <i>gross</i> and <i>fine</i> belong to? Define the two ends of the continuum.	Continuum:	Muscular
		Gross:	Skills that emphasis
		Fine:	Skills that emphasis

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Classification of Skills (continued)		Questions		
		4. Which continuum do <i>discrete</i> , <i>serial</i> and <i>continuous</i> belong to? Define the categories of the continuum.	Continuum:	Continuum:
			Discrete:	Skills that
			Serial:	Skills that
			Continuous:	Skills that produce c
		5. Below, two ends of a continuum are described. Identify the two ends being described and state which continuum they belong to. (i) Skill takes place in unpredictable surroundings. The skill must be adapted to respond to a stimuli. (ii) Skill takes place in predictable surroundings. There is no need to adapt technique to respond to a stimuli.	Continuum:	Environm
			(i)	Open
			(ii)	Closed
		6. Define 'low' and 'high' organisation skills and provide a sporting example for both.	Low:	Simple sk e.g. long j
			High:	Complicat skills flow being clea e.g. hurdl

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Classification of Skills (continued)		Questions		
	7. Give sporting examples of how different skills can be categorised by pace.		Self-paced:	Dart throw performance (accept skill)
			Externally paced:	Tennis return of serve (accept skill or pace)
	8. Sporting movements can be classified against numerous continua at one time. Classify a 50 m freestyle sprint (swimming) against each of the continua and justify your answer for each.		Difficulty:	Simple –
			Environmental:	Closed – the change to external s
			Pacing:	External –
			Muscular involvement:	Gross – the groups in:
			Continuity:	Continuous next strok
			Organisation:	Low – the

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Types and Methods of Practise		Questions	
	1.	Describe and explain part practice. Give a sporting example.	(accept suitable answers) Part practice takes a whole skill apart. For example, in swimming, an athlete can break up a stroke into breathing, each stroke, and arm movements.
	2.	Give a sporting example of when whole practice should be used.	Whole practice should be used for skills that are simple and can be done in one go. For example, a free throw in basketball doesn't benefit the athlete to break it down into parts.
	3.	What benefit does whole practice have over part practice?	Whole practice enables the athlete to develop a kinaesthetic feel for the skill. This helps them in the future as they can perform the skill more efficiently.
	4.	Explain when whole-part-whole practice would be used. Give a sporting example of a skill that may use this practice method.	Whole-part-whole practice is used for skills that are complex and have many components. The athlete performs the whole skill first, then breaks it down into parts to practise these components, then performs the whole skill again. For example, a gymnast might perform a whole routine. Then they break it down into parts, such as a run-up, placement of feet, striking the ball, and so on. Once these have been practised, the skills are brought back together to perform the whole routine.

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Types and Methods of Practice (continued)		Questions	
	5.	Explain the difference between whole-part-whole practice and progressive-part practice.	Whereas whole-part-whole practice is completed separately to each other, progressive-part practice breaks the skill down into subroutines, bringing the subroutines together to complete the whole skill. The player would practise the run-up and striking of the ball. Finally, the player would practise the whole skill of kicking the ball.
	6.	Define 'massed practice' and state which kind of skills would be completed using massed practice.	Massed practice is the continuous repetition of a skill, which suits simple skills that can easily be repeated.
	7.	Define 'distributed practice'.	Distributed practice is similar to massed practice, but with longer rest periods between repetitions.
	8.	What advantages does distributed practice have?	Distributed practice is beneficial for complex skills, as it allows the player to receive feedback and make adjustments during the practice session.
	9.	When would fixed practice be used? Give a sporting example.	Fixed practice is used to practise a specific skill or technique, such as a free kick in football. For example, getting a player to practise a free kick repeatedly until they are comfortable with the skill.

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Types and Methods of Practice (continued)		Questions	
		10. What are the disadvantages to fixed practice?	Fixed practice does not allow open variety of changing stimuli that allow
		11. Define 'varied practice'.	Varied practice is the practising of and changed by a coach.
		12. Why might a coach use varied practice for their athlete?	Varied practice allows a coach to competitive situation. This allows athlete's decision-making skills as
		13. Provide the best type of practice for each of the different skill classifications that could be used to optimise performance. Provide brief justification for your choice.	Low organisational skills: Continuous skills: Closed and self-paced skills: P d N a p F s t

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Transfer of Skills		Questions	
	1. What is meant by 'positive transfer of skills'?		A positive transfer of skills is due to the high degree of similarity between the original and new skills, leading to slight adjustments to their original performance.
	2. Give a sporting example of positive transfer.		(accept any appropriate example) A fly half in rugby can kick a rugby ball as they would only need to adjust their technique to kick the ball to their previous position.
	3. Define 'negative transfer'.		Negative transfer is the negative effect of learning one skill on performing a new skill. It may occur when a skill is learned, then struggles to be learned or performed.
	4. Give a sporting example of negative transfer.		(accept any appropriate example) Negative transfer of a skill could occur when a player who is good at the squash forehand, the tennis backhand naturally attempt to apply top spin to the ball in squash will not react to the ball in the same way.

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Transfer of Skills (continued)		Questions	
	5. Define 'proactive transfer'. Give a sporting example.	Definition:	Proactive learning
		Sporting example:	For example, a footballer who is a winger would be suited to a skill that involves a lot of skill.
	6. How is retroactive transfer different to proactive transfer?	While proactive transfer is the effective transfer of skills from one skill to another, retroactive transfer is the effective transfer of skills from one skill to another.	
	7. Why would a footballer need to use bilateral transfer to become an elite athlete? Give an example of a football skill that would require them to use bilateral transfer.	Bilateral transfer is the transfer of skills from one skill to another. For example, a footballer who is a winger would be suited to a skill that involves a lot of skill on both sides of the feet.	
	8. Outline two ways a coach can optimise positive transfer and limit a negative transfer of a skill.	• The two skills (original and transfer) must be similar. • Subroutines of skills must be similar. • Ensure the player is aware of the transfer. • Start new skill by learning the original skill.	

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Principles and Theories of Learning Movement Skills		Questions	
	1. Describe the three conditioning techniques, within operant conditioning, that can be used to alter behaviour.	Positive reinforcement – if a person performs a correct behaviour, the athlete is encouraged to perform the behaviour again. Negative reinforcement – a negative consequence is removed to encourage correct behaviour. This encourages the athlete to perform the behaviour again. Punishment – punishment is used to discourage someone (e.g. a coach). An individual is punished similarly in the future.	
	2. Explain how cognitive theories of learning encourage the learning of new skills.	Cognitive theories of learning believe that individuals learn through a response to a stimulus (such as a skill) and that individuals are constantly changing their behaviour based on their environment. Gestaltists believe that skills are learned as a whole (i.e. no subroutines to study). Understanding a skill in its entirety is essential for learning. Insight theory breaks a skill into smaller parts for an individual to learn. For an individual to learn a skill, they must understand the skill as a whole.	
	3. Name the four stages of Bandura's theory of observational learning.	Attention, retention, motor reproduction, motivation.	

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Principles and Theories of Learning Movement Skills (continued)		Questions	
	4.	Explain what Bandura meant by <i>attention</i> and <i>retention</i> in observational learning.	Attention is the observer paying attention to the skill being performed by athletes on TV). Retention is the ability of the observer to store their memory for later use. This is based on their memories of the skill being performed.
	5.	What would an observer do in the <i>motor reproduction</i> stages of Bandura's theory of observational learning?	In this stage, the observer attempts to reproduce the skill witnessed (during the attention stage).
	6.	Name an important consideration when applying the <i>motor reproduction</i> stage of Bandura's theory.	The observer should be of a high enough age to be performing the skill they witnessed.
	7.	Why is motivation an important consideration in Bandura's theory?	The individual must be motivated to learn the skill until they reach a required stage of learning.

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Stages of Learning		Questions	
	1.	Name the three stages of learning.	Cognitive, associative, autonomous
	2.	Identify which stage of learning a child who is learning how to rugby tackle for the first time would be in?	The child would be in the cognitive stage
	3.	Describe the stage of learning the child is in (identified in question 2).	- The earliest stage of learning is the cognitive stage, where the learner is without cognitively processes - The tackles would also be in the cognitive stage, as the child cannot a time, as the child cannot a time - The child would rely heavily on the teacher (external, positive and negative feedback) - The child would make errors through trial and error until they get it right
	4.	Describe the characteristics of a learner in the second stage of learning.	- Shift towards physical (as opposed to cognitive) - The performance of a skill is more consistent - A learner will make fewer errors in complex situations or adapt to new situations - Performer uses more intrinsic feedback

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Questions	
5. Describe the characteristics of someone in the final stage of learning.	• High level of skill performance • Physical practice of the skill • Performer has total knowledge • Learner can only make minor adjustments • The performer is able to adapt
6. Which types of feedback are more effective for athletes at the autonomous stage than the cognitive stage?	Intrinsic and negative.

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Guidance		Questions	
	1. Define 'verbal guidance'.		This is instruction from an instructor to a performer about a skill or movement. Instruction can be given before, during or after the skill.
	2. Define 'visual guidance'.		Visual guidance is any visual aid that helps a performer to see their performance of a skill, for example a diagram or a video that shows the correct technique for a skill.
	3. Define 'manual guidance'.		The physical moving of a performer's body parts into the correct position for a skill. For example, a karate teacher moving a learner's arm into the correct position for a strike.
	4. Define 'mechanical guidance'.		The use of physical aids or equipment to help a performer to perform a skill. For example, a coach using a stopwatch to time a runner's lap.
	5. Give a sporting example of mechanical guidance.		Any appropriate example of mechanical guidance. Or for dangerous activities, a coach using a somersault.

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Guidance (continued)	Questions	
	6. Give the advantages and disadvantages of verbal and visual guidance.	Advantages
		Verbal
		Visual

- Useful to target weaknesses.
- Can give additional feedback to experienced performers.
- Helps to motivate learners.

- Useful for beginning learners to learn simple skills.
- Can be used to show movement as a whole to the learner what they look like when performed correctly.
- Helps the learner to form a mental image of the skill.

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	Questions	
Guidance (continued)	7. Evaluate the use of manual guidance.	Advantages: • Increases confidence • Can be used to break down • In some sports, can in Disadvantages: • Performer may become • Inhibits the learner de
	8. Assess how mechanical guidance would be useful for a beginner learning how to swim.	Useful for a beginner because • Increases confidence • Can increase the safety • Provides the learner with • performed. Not useful for a beginner because • Can lead to over-reliance • Learner may not get a • their own.

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Feedback		Questions	
	1. Define 'intrinsic feedback' and provide the advantages and disadvantages of this type of feedback.	Definition:	Intrinsic feedback comes from within the performer.
		Advantages:	Can improve performance without the need for external feedback.
		Disadvantages:	If a performer does not receive feedback, they may not know they are doing well or poorly.
		Extrinsic feedback is feedback from a trainer.	
	2. Define 'extrinsic feedback'.	Cognitive and associative stages of learning.	
		3. Which stages of learning are most suitable to extrinsic feedback?	Advantages:
	4. Describe the advantages and disadvantages of extrinsic feedback.		Disadvantages:

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Feedback (continued)		Questions	
	5.	What are the benefits of positive feedback?	Positive feedback is used to encourage a player to perform the same task. Positive feedback can strengthen the skill.
	6.	What are the disadvantages of positive feedback?	A performer may become too reliant on positive feedback, therefore, become unmotivated. Negative feedback may also become overconfident.
	7.	When would negative feedback be used and what benefits can it have to a performer?	Negative feedback is used when a performer is not performing well. It can motivate a player to perform better next time.
	8.	What are the disadvantages of negative feedback?	In the earlier stages of learning, negative feedback due to an error can be demotivating.
	9.	Explain how the use of positive and negative feedback should be adapted to someone in the cognitive stage of learning.	In the cognitive stage of learning, a performer should be motivated to continue to learn. Positive feedback should be used a lot to maintain motivation. In the associative stage, receive too much positive feedback should be kept to a minimum. In the autonomous stage, wrong way (e.g. shouting). Use some tips and teaching (e.g. demonstrate). Use some negative communication.

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Feedback (continued)		Questions
	Knowledge of performance is comments or visual feedback source of feedback if the performance is an external performance; for example, the	
	Advantages:	Can be unsucc
	Disadvantages:	Too mu they an feedba
	Advantages:	Provid to prov they ju
	Disadvantages:	Does n succes of mot
	10. Describe 'knowledge of performance' and 'knowledge of results'.	
	11. What are the advantages and disadvantages of knowledge of performance?	
	12. What are the advantages and disadvantages of knowledge of results?	

2.2: Sports Psychology

Individual Differences – Personality		Questions	
1.	Define ‘personality’.		Personality is the combination of all the characteristics that make an individual unique.
2.	Define ‘trait’.		A trait is an everlasting feature of an individual.
3.	Explain the difference between an introvert and an extrovert.		An introvert is someone who feels drained after socialising and their energy levels seem to drop. An extrovert is someone who gains energy from socialising and their energy levels seem to rise.
4.	Which type of personality is being described below? <i>Calm, even-tempered, controlled, careful, reliable, thoughtful.</i>		Stable
5.	Which type of personality is being described below? <i>Restless, aggressive, anxious, pessimistic, excitable, impulsive.</i>		Unstable

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Individual Differences – Personality (continued)		Questions	
	6.	Traits can be categorised as either Type A or Type B personalities. Describe the differences between these personalities.	Type A personalities are compared to Type B personalities. Type A personalities have a higher work rate, potentially higher levels of self-control. Type B personalities have lower achievement levels and work at a slower rate, leading to lower productivity than Type A personalities.
	7.	Explain the social learning theory of personality.	The social learning theory hypothesises that people learn to behave in certain ways to match the social situation to their previous experiences to apply those behaviours.
	8.	Describe the interactionist theory of personality.	The interactionist theory suggests that personality is shaped by both personality traits and the environment. It focuses on the individual, adapting to their situation.

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Individual Differences – Attitudes		Questions
	1. Define 'attitude'.	Attitude is an emotional feeling.
	2. Name and describe the factors that affect the formation of attitude.	Personality type – the many different responses to a situation.
		Social influences – the effect that other people have on an individual's attitude.
	3. Outline the three components of attitude.	Personal experiences – based on a particular situation in a similar way to that of others.
		Conditioning – reinforcement that can influence the way an individual behaves.
		Affective component – the emotional part of an attitude towards it, e.g. positive or negative.
		Cognitive component – the individual's beliefs about the perceived positive or negative aspects of an attitude.
		Behavioural component – how an individual behaves positively towards something, or negatively towards an object.

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Individual Differences – Attitudes (continued)		Questions	(accept any suitable answer) e.g.
	4.	Sometimes it is important to change the attitude someone has towards an object or situation. Give a sporting example of when the attitude of an individual needs to change.	In sport, the attitude of an athlete can change from a situation. For example, a player who is a good defender may become a good attacker. They therefore have to practise or improve their skills to perform a different routine. Changing their attitude can help them perform a handstand, creating a new level of the skill they are a
	5.	Explain how persuasive communication can aid attitude change.	This method uses communication through numerous factors. Firstly, the persuader (e.g. a coach). The persuader has to make it harder to change the attitude of the persuader is of a higher status than the individual, the message is more credible. The persuader aims to present their message in a way that the individual through overloading, the attitude change is taking place and will encourage the individual to
	6.	What is meant by 'cognitive dissonance'?	Cognitive dissonance is the conflict between two attitudes towards something. A conflict arises when an individual is faced with a choice to change their behaviour to reduce the dissonance. They can target any of the three components of the attitude to

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Individual Differences – Motivation		Questions	
	1.	Define 'intrinsic motivation'.	Intrinsic motivation is motivated by the individual's intrinsic feedback. It consists of opinions towards sport.
	2.	Define 'extrinsic motivation'.	Extrinsic motivation is motivated by rewards that can be given.
	3.	What are tangible and intangible rewards? Give examples.	Tangible rewards are rewards that can be given in the form of money or sponsorship. Intangible rewards are non-physical rewards that consist of positive feedback such as praise.
	4.	Explain how extrinsic motivation would be used to motivate a beginner in gymnastics. Give examples of extrinsic motivation.	- Extrinsic rewards help to motivate a beginner. - Acts as a motivator to reinforce good experiences (e.g. praise). - Competitive young people are motivated by the key motivator to continue to improve. - Some young gymnasts are motivated by their parents, as the motivation to improve.

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Questions	
5. Explain how intrinsic motivation would benefit an elite football player.	• At an elite level, footballers have intrinsic motivation. • Players can play for enjoyment. • Elite players are competitive.
6. Explain how a rugby player would be extrinsically motivated using tangible and intangible rewards.	• Tangible and intangible rewards are given to players. • A rugby player would be motivated by the end of the season by a trophy. • Intangible motivation would be given by praise and motivation from coaches.

Individual Differences – Motivation
(continued)

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Questions		
Individual Differences – Arousal	1. Define 'arousal'.	Arousal is an increase in stimulus.
	2. Identify the theory of arousal represented by the graph below and give a brief explanation of what the theory states.	Drive theory • The theory that • Performance level

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Questions		
Individual Differences – Arousal (continued)	3. What are the limitations of the theory (from question 2)?	Drive theory assumes that arousal levels are not. It also does not account for individual differences in discipline. For example, a highly disciplined athlete may perform at a high level despite low arousal levels.
	4. Explain the inverted-U theory and draw a graph to represent the theory.	The inverted-U theory suggests that performance levels increase to an optimal arousal-to-performance level and then decrease. The graph shows a bell-shaped curve representing this relationship.

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Questions		
Individual Differences – Arousal (continued)	5. Describe the catastrophe theory of arousal.	Catastrophe theory is a performance of an arousal theory (Theory). However, a level, will cause a sudden drop in performance.
	6. Explain how performance levels can be recovered after a 'catastrophe'.	Following a sudden drop in performance (than their optimal) state, leading to reduced arousal, they can play well again.

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Questions	
1. Define 'anxiety'.	Anxiety is a feeling of nervous to be a threat.
2. Name and describe the two types of anxiety.	Trait anxiety: A person's n
	State anxiety: The response
3. Describe the somatic responses to anxiety.	• Headaches • Tension • Increased heart rate • Increased respiratory rate
4. Describe the cognitive responses to anxiety.	• Loss of concentration • Confusion • Negative thoughts
5. Explain what is meant by 'zones of optimal functioning' and how they vary from person to person.	A zone of optimal functioning succeed in a task (see inverted require high levels of arousal may only need low levels of a

Individual Differences – Anxiety

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Individual Differences – Aggression		Questions	
	1. Define 'aggression' in a sporting context.		Aggression is the intentional behaviour that is directed towards another person and is categorised into either channelled or unchannelled aggression.
	2. Describe the instinct theory of aggression and highlight its limitations.		The instinct theory of aggression suggests that aggression is an innate characteristic that they cannot be taught. It is a natural part of human nature and has been shown by everyone as a release of aggression. It is a platform to release aggression and is a natural part of human nature. However, the theory does not explain all aggression. Furthermore, some argue that aggression is learned and that it creates aggression in people. It is not innate and so aggression is no longer a natural part of human nature (ancestors).
	3. Describe the social learning theory of aggression and highlight its limitations.		The social learning theory proposes that aggression is learned from others. An individual can learn aggression from others through observation and imitation. People and imitates that behaviour. The theory, however, does not explain all aggression. A person – suggesting that not all aggression is learned.

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Questions	
Individual Differences – Aggression (continued)	4. Using a sporting example, explain the aggressive cue hypothesis.
	5. How does the frustration–aggression hypothesis explain aggression as a result of frustration?

The aggressive cue hypothesis suggests that the frustration of an individual, leading to a readiness for aggression, is recognised; if an opposing defender consistently commits a foul tackle on them, the player may respond with pushing/shoving and shouting.

This hypothesis argues that the result of aggression is the result of frustration; inevitably leads to aggression blocking the achievement of a goal.

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Questions	
1. Define 'social facilitation'.	The positive impact performi
2. Define 'social inhibition'.	The negative impact performi
3. Describe how an audience would either socially facilitate or inhibit introverts and extroverts.	Introverts:
	Audience inc introvert stru
	Extroverts:
	Audience inc can increase
4. What effect would an audience have on beginners and experts of a sport or skill?	Beginners:
	High arousal concentratio concentratio
	Experts:
	Social facilitat on the task c
5. Would an audience lead to social inhibition or social facilitation when an athlete performs simple and complex skills? Explain why.	Complex skills require higher the performance. This is beca subroutines of a skill. The per audience and increased arous require less attention than ot

Individual Differences – Social Facilitation

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Questions	
6. Explain why the performance of fine skills would be socially inhibited by an audience.	Fine skills require higher level perception are best at low level
7. Explain why the performance of gross skills would be socially facilitated by an audience.	Gross skills do not need high level perception so an audience would not inhibit
8. What is meant by the term 'evaluation apprehension'?	Evaluation apprehension is an anxiety about being judged by others, leading to increased stress.
9. Identify the strategies that can be implemented to minimise social inhibition.	• Focusing on the important aspects of the skill • Mental rehearsal • Self-talk • Relaxation exercises • Positive reinforcement • Overlearning of skills (skill practice beyond the point of initial learning) • Practising in front of an audience • Goal setting

**Individual Differences – Social Facilitation
(continued)**

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Questions			
Group and Team Dynamics in Sport	1. What is a group?	A group is a body of people that work together to achieve a common goal.	
	2. Outline the four stages of group formation.	1. Forming	First meeting, initial relationships, focus on work.
		2. Storming	At this stage, team members may cause conflict, but this is necessary for the next stage of performance.
		3. Norming	Problem-solving stage. Individual team members resolve conflicts, and the team achieves its goals.
		4. Performing	As a whole, the team achieves its goals and develops the skills to handle future challenges.
	3. Write an equation to represent Steiner's Model of Group Effectiveness.	Actual productivity = best potential productivity - losses due to social loafing	

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Group and Team Dynamics in Sport (continued)		Questions	
	4.	What is group cohesion?	Group cohesion is the effect of that group, to work towards a common goal.
	5.	Using sporting examples, describe the factors that cause losses due to faulty processes.	• Coordination losses – group e.g. a football team of tall players may struggle in a match. • Motivational losses – an individual may experience losses in others (Ringelmann effect) so many squad members so
	6.	Explain the Ringelmann effect and its relationship with social loafing.	The Ringelmann effect is the reduction in individual effort as the group gets larger. This leads to members exerting less effort in a group or, sometimes, laziness.

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Goal Setting in Sports Performance		Questions	
	1. Suggest how goal setting can aid attentional focus.		Goal setting brings an athlete's attention to the task.
	2. What effect does goal setting have on task persistence of an athlete?		Setting long-term goals helps maintain focus. Having short-term goals helps retain the athlete's attention on the task.
	3. How do goals affect confidence and self-efficacy of an athlete?		Setting, and therefore achieving goals, increases confidence and self-efficacy to understand how to overcome challenges.
	4. Give a sporting example of how goal setting can be applied to control arousal and anxiety.		(accept suitable examples) - Goal setting allows an individual to manage arousal and anxiety (stress) and arousal levels. - For example, a schoolchild could set a goal to be the top scorer in the football team. The child could then manage their arousal levels by setting in too many goals. - Their arousal is high as they are competing for a goal. - A coach could set them a goal to be the top scorer in the football team, focusing the child's attention away from the negative aspects of the game and focus to the positive aspects of the game.

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Goal Setting in Sports Performance (continued)	Questions	
	5. Describe how and why a coach would use goal setting to monitor performance of an athlete.	Goal setting can help a coach performance. Failure to reach work on in the future, while a performance and would give t
	6. Identify and describe the components of the SMART principle of goal setting.	Specific – goals have to be foc too broad.
		Measurable – it helps if goals plateaus or backwards progre
		Achievable – goals must be ch athlete may become unmotiv
		Recorded – goals should be re performance.
		Timely – goals should have a t urgency and motivation to pe next task.

2.3: Sport and Society

Emergence and Evolution of Modern Sport: Pre-industrial Britain		Questions	
1. How did <i>social class</i> affect participation in sport during pre-industrial Britain?	2. Describe how <i>gender</i> played a role in sport participation during pre-industrial Britain.	3. Explain how <i>law and order</i> affected participation in sport during pre-industrial Britain.	The upper classes had disposable wealth for pastimes and hobbies. They could afford to play on their own days and so had little free time to play rough and violent games, whereas the lower classes did not.
			Sports were played nearly exclusively by the upper classes due to the nature of the games. Women did not play.
			Living conditions for the lower working classes were poor. Therefore, the games played by the upper classes did not play the same role in their lives due to their living conditions and status.
			As education and literacy rates were low, and sports had to be very simple and accessible, there was further violence in the sports as they were often played in public spaces.
			Due to the long working hours of the lower classes, there was less time for sport. As such, sport was largely played by the upper classes.

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Emergence and Evolution of Modern Sport: Pre-industrial Britain (continued)		Questions	
	6.	Explain how <i>time</i> affected participation in sport during pre-industrial Britain?	• There was a distinct lack of free time. Therefore, sport was played on the weekends. • Long working hours also caused fatigue. • Short amounts of time off meant that the upper classes had more free time to participate in sport.
	7.	Explain how <i>transport</i> affected the location of sport during pre-industrial Britain?	• Transport was limited in its range. People could not travel far to play sports. • The location of sport was determined by the lower classes. • Bad road systems meant travel was difficult. • Local games led to unwritten rules. • Upper classes were able to travel further. • Therefore, upper-class sports developed in the countryside.
	8.	Explain how <i>money</i> influenced sport in the upper and lower classes during pre-industrial Britain.	• The upper classes had more disposable income, so they could afford to play sports. • The lower classes had less money, so they played sports that were free or cost very little. • The location of sport was determined by the lower classes, giving the lower classes an environment of the upper classes. • A lack of disposable income in the lower classes meant they could not afford to play sports.

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Emergence and Evolution of Modern Sport: Post-1850 Industrial Britain		Questions	
	1.	After the Industrial Revolution, there was an emergence of professional and amateur status in sport. Define the terms 'professional' and 'amateur' and identify which classes belonged to each category.	A professional was an individual whose sport was their main source of income. In contrast, amateurs were known as professionals. In contrast to the enjoyment of it, without financial gain, largely amateur athletes as they were seen as a social event.
	2.	Explain how women were perceived in sport and the effect their gender had on participation during post-industrial Britain.	Women were seen as the weaker sex and were seen to reflect this. Violent sports were not participated in, so middle-class women participated in lawn tennis.
	3.	How did <i>law and order</i> and <i>literacy</i> rates change from pre-industrial Britain to post-industrial Britain? What effect did this have on sport?	From pre- to post-industrial Britain, there was an increase in education and literacy, leading to increased monitoring of game rules.

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	Questions	
Emergence and Evolution of Modern Sport: Post-1850 Industrial Britain (continued)	4. How did the <i>availability of time</i> change from pre- to post-industrial Britain? Describe the effects this had on sport.	The Industrial Revolution meant a shortening of the length of their working days to free up more time to the working classes due to the increase in factory-based production. This led to the rise of sport for sport to grow, as workers had more free time. Intramural-style tournaments became popular in the nineteenth century which provided a means of physical activity and recreation.
	5. Explain how a change in the <i>availability of money</i> for the working class changed participation in sport in post-industrial Britain.	• The Industrial Revolution meant they could play sports (e.g. football, betting). • An increase in wages also led to more leisure time and participation in sports. • This encouraged the development of professional sports as teams could share their costs.
	6. Explain how a change in <i>availability of transport</i> changed participation in sport, in post-industrial Britain.	• More affordable and efficient transport. • The working class could travel to sports events. • Increased travelling meant that sports could be played in different locations. • Mass production of cars and bicycles.

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Questions	
7. How did <i>public schools</i> influence the organisation of sports and games in post-industrial Britain?	Headmasters of public schools encouraged schoolboys. As such, boys were encouraged to use their own energy and teach self-control. This led to an increase in the organisation of sports.
8. Explain how the <i>promotion of ethics</i> and the ' <i>cult</i> ' of <i>athleticism</i> influenced sport through public schools in post-industrial Britain.	Schoolboys were encouraged to play games which included playing sports. This was accompanied by an increase in the number of sports encouraged to participate with.
9. Describe how public schoolboys helped to spread games and ethics across the country in post-industrial Britain.	When public schoolboys left for university, they took the code of conduct with them. They spread the code across the country. The code was developed as numerous rules were adapted into their own.

Emergence and Evolution of Modern Sport:
Post-1850 Industrial Britain (continued)

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Emergence and Evolution of Modern Sport: Twentieth-century Britain		Questions	
1. How did class influence amateurism and professionalism in the twentieth century?	2. What role did women play in the First World War?	3. Explain how the First World War influenced perceptions of women's participation in sport.	In the twentieth century, professional working-class people who made their money from sport. Similarly, amateur sportspeople. However, the development in upper classes to participate in sport.
			During the First World War, women played a significant role in the war effort, while the men were away.
			After the war, the role of women in sport was seen to have changed. A more professional view of sport was introduced, meaning that women's participation in sport was reduced in the view that women should not participate in a wider range of sports.
			In the twentieth century, a more professional law was introduced, meaning that the law and respect of sport to be enforced. This meant that workers had more time to participate in sport.

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Emergence and Evolution of Modern Sport: Twentieth-century Britain (continued)		Questions	
	5.	Describe how the <i>availability of money</i> changed in the twentieth century to develop sport.	• An increased working wage for matches and large events • More money generally made available to play a variety of sports
	6.	Describe how a <i>change in transport</i> in the twentieth century developed sport.	• Improvements in the railways • Public and private transport • People able to travel to play • More people able to travel
	7.	How did <i>education</i> change in the twentieth century to promote sport?	• Education Act of 1944 – encouraged overall development of a child • Education Reform Act of 1988 – encouraged development of students • Physical education became a compulsory type of school (grammar, comprehensive) • Extracurricular activities encouraged

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Emergence and Evolution of Modern Sport: Twenty-first-century Sport		Questions	
	1. How have the terms <i>amateurism</i> and <i>professionalism</i> changed in sport in the twenty-first century?	The terms amateurism and professionalism are just perceived. Instead, amateurism is just perceived for financial reasons. Many sports are still associated with the working class and dressage are seen as upper class associated with the working class.	
	2. Explain how the roles and status of women has changed in the twenty-first century.	While some gender stereotypes exist in all areas of life (wage, sport roles), female participation in sports roles have been occupied by women and team doctors.	
	3. How has law and order changed in the twenty-first century and how does it affect sport?	Laws are now enforced across all areas of behaviour. This is also true in punishing bad behaviour of athletes. Also aims to minimise unruly behaviour of a player for punishing an opponent.	

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Emergence and Evolution of Modern Sport: Twenty-first-century Sport (continued)	
Questions	
4. Explain the developments of education in twenty-first-century Britain and the influence this has had on participation in sport.	Education is now compulsory behaviour and social skills, which curriculum now ensures physical of a similar standard across the sporting facilities, time spent
5. Describe how an increase in available time and money has influenced sport in the twenty-first century.	Available time and disposable spent on participation in a wide organisations and schools more available for use in sport. Character more time is available for adult sports events.
6. Describe how transport in the twenty-first century has influenced sport.	Transport is now available in schools and buses enable people to travel availability and affordability of people to large sporting events

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	Questions	
Emergence and Evolution of Modern Sport: Twenty-first-century Sport (continued)	7. Name and describe three factors that have led to increased globalisation of sport in the twenty-first century.	Media coverage – media coverage influences the masses. It also influences the sums of money to broadcast events. Freedom of movement – sportsmen and women. Likewise, spectators can travel to events. Greater exposure of people to sport. More people are encouraged to participate in sport and exposure to professional clubs, and seek funding for their own clubs.

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Global Sporting Events: The Modern Olympic Games		Questions	
	1.	Who revived the Olympics and created the 'modern' Olympic Games?	Pierre de Coubertin.
	2.	In which year and city did the first modern Olympic Games take place?	1896 – Athens.
	3.	Outline the main aims of the modern Olympic Games.	• Everyone is to have a fair • To promote education through sport • To promote peaceful societies • Maintaining the spirit of the Games
	4.	Outline how the 1936 Berlin Olympic Games were politically exploited. Highlight the importance of Jesse Owens in these Games.	The 1936 Berlin Olympic Games were held in a time of Nazi Germany, which was in power. The Olympic Games were used to promote Nazi beliefs – the Third Reich ideology of Aryan supremacy. Jesse Owens was a black athlete who won four gold medals at the 1936 Berlin Olympics. He was very successful at the Berlin Games, which was a humiliation for the Nazis. This embarrassed Hitler, who was told to welcome every medalist to the Games.

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Global Sporting Events: The Modern Olympic Games (continued)		Questions	
	5.	Why were the 1968 Mexico City Olympic Games politically significant?	Around the time of the 1968 Olympics, the USA, was being criticised for its role in the Vietnam War. At the medal ceremony, two medal-winning athletes wore black gloves and raised their fists in defiance of their home country.
	6.	Describe the significant political events that took place at the 1972 Munich Games.	In the 1972 Munich Games, Palestinian terrorists took 11 Israeli team members hostage. 11 Israeli team members were released from Israeli imprisonment and 5 Israelis were murdered.
	7.	How did the events of the 1972 Olympic Games affect future games?	The massacre caused a suspension of the Games and caused a huge increase in security for future events.
	8.	Explain why the 1980 Moscow and 1984 Los Angeles Olympic Games were boycotted.	The 1980 Moscow Olympic Games were boycotted by the USA in response to the invasion of Afghanistan by the USSR. In response to the 1980 Games, the 1984 Los Angeles Olympic Games were boycotted by the USSR and several other countries. Contrasting political ideologies (capitalism vs communism).

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Questions	
1. Define what is meant by a 'global sporting event'.	A global sporting event is an event whereby compete in sport. They can be made up of j (e.g. the Olympic Games).
2. Provide two examples of global sporting events other than the Olympics.	Accept suitable examples, e.g. - FIFA World Cup - Rugby World Cup - Tour de France - Major tennis tournaments
	Positive
3. Identify the positive and negative <i>sporting impacts</i> of hosting a global sporting event.	- Encourages nations to participate in spo - Increased coverage and exposure of minority sports. - Role models are identified in sport. - Motivates athletes to increase their standard. - New sports facilities built. - Increase in funding for sports.

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Questions	
Positive	
4. Identify the positive and negative <i>social impacts</i> of hosting a global sporting event.	- Increases level of participation nationwide promoting healthy and active lifestyles. - Sense of national pride as success is celebrated. - More money enters hosting areas/counties. - Increased use of local facilities. - Improved transport systems. - Athletes motivated to want to compete against the best in the world.
5. Assess the <i>economic impacts</i> of hosting a global sporting event.	Hosting a global sporting event brings in a lot of money for the host nation. It creates jobs for people in construction-based industries. The facilities and teams used after the event for clubs and teams to use the facilities and just concern themselves with the sporting event are huge and it must be ensured that the host nation can pay back through travel, tourism and the event it can bring in enormous debts.
6. Assess how hosting a global sporting event can affect the host nation <i>politically</i> ?	If a global event is successful, the political popularity of the host nation increases. A successful event, increasing their popularity with the public. Negative political impacts of hosting a global sporting event can be targets of politicians. Politicians may also be targets of criticism (negative aspects) of hosting the event. Finally, if the event is unsuccessful, it may make themselves unpopular with the general public.

Hosting Global Sporting Events (continued)