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Sports, exercise and health science

Standard level

Paper 1A

28 April 2026

Zone A afternoon | **Zone B** afternoon | **Zone C** afternoon

1 hour 30 minutes [Paper 1A and Paper 1B]

Instructions to students

- Do not open this examination paper until instructed to do so.
- Answer all the questions.
- For each question, choose the answer you consider to be the best and indicate your choice on the answer sheet provided.
- A calculator is required for this paper.
- A clean copy of the **SEHS data booklet** is required for this paper.
- The maximum mark for paper 1A is **[30 marks]**.
- The maximum mark for paper 1A and paper 1B is **[55 marks]**.

1. An athlete consumes a gel pack containing carbohydrates before a race. What initiates insulin release from the pancreas?
 - A. Chemical changes in the blood
 - B. Signals from the nervous system
 - C. Increase in norepinephrine
 - D. Stimulation from the anterior pituitary gland

2. Which describes a cyclist's cardiovascular response during the beginning of a race?

	Nerve stimulation	Cardiovascular response
A.	Parasympathetic	Increased heart rate
B.	Sympathetic	Decreased cardiac output
C.	Parasympathetic	Decreased blood pressure
D.	Sympathetic	Increased blood supply to heart

3. An athlete is playing soccer (football) on a hot day. Which causes a decrease in body temperature?
 - A. Vasoconstriction and increased sweat production
 - B. Vasoconstriction and increased muscle contractions
 - C. Vasodilation and increased sweat production
 - D. Vasodilation and increased muscle contractions

4. A runner competes in an 800 m track event. Which response indicates an increase in carbon dioxide production during the race?

	Blood pH	Feedback mechanism
A.	Increases	Negative
B.	Decreases	Positive
C.	Increases	Positive
D.	Decreases	Negative

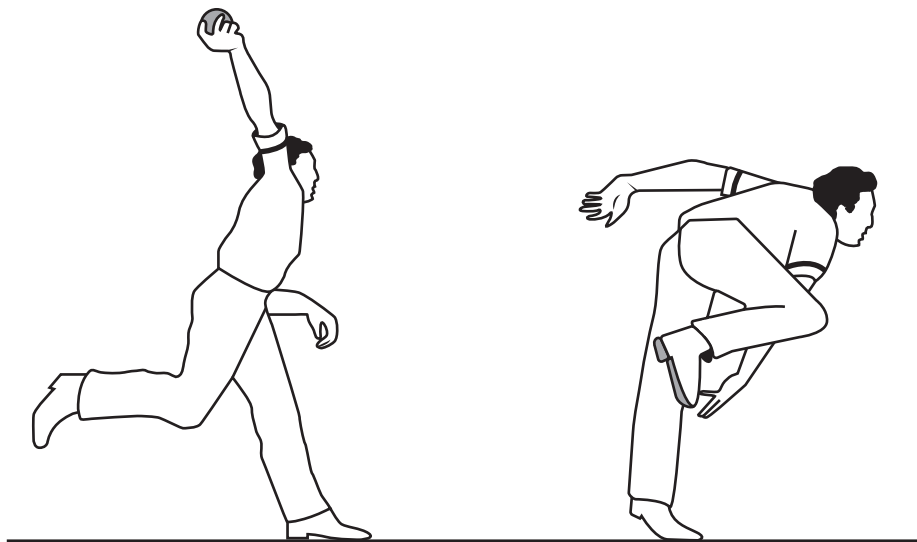
5. Which are long-term vascular adaptations to endurance training?
- I. Increased blood plasma levels
 - II. Decreased resting blood pressure
 - III. Increased capillarization in the lungs
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
6. What occurs during the exhalation phase of ventilation during strenuous exercise relative to at rest?
- A. Relaxation of the diaphragm and increased volume in the lungs
 - B. Increased volume in the lungs and decreased pressure in the lungs
 - C. Contraction of internal intercostal muscles and increased pressure in the lungs
 - D. Relaxation of the diaphragm and decreased pressure in the lungs
7. A weightlifter wants to increase muscle mass while maintaining the same caloric intake. Which food source should they increase in their diet?
- A. Potatoes
 - B. Chicken
 - C. Olive oil
 - D. Berries
8. Which is correctly classified?
- A. Lipids: synthesize hormones and provide protection
 - B. Proteins: support metabolic pathways and primary energy store
 - C. Carbohydrates: allow gaseous exchange and are a primary structural component
 - D. Water: catalyses reactions and is a fuel source

9. Why would an endurance athlete require greater water intake compared to a sprinter?
- I. Higher metabolic rate
 - II. Increased sweat production
 - III. Decreased insulin secretion
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
10. An athlete sprints 40 m in 5.4 s. What is the dominant energy system?
- A. Oxidative
 - B. Anaerobic glycolysis
 - C. Phosphagen
 - D. Aerobic glycolysis
11. Which benefit of exercise reduces the risk of type 2 diabetes?
- A. Increased muscle mass for glucose storage
 - B. Decreased sensitivity of cells to insulin
 - C. Reduced glucose tolerance
 - D. Increased blood glucose levels
12. An athlete aims to improve their muscular strength. How can the athlete use the principle of progressive overload?
- A. Increase rest period
 - B. Decrease resistance
 - C. Maintain exercise duration
 - D. Increase repetitions

13. Which bone is correctly categorized?

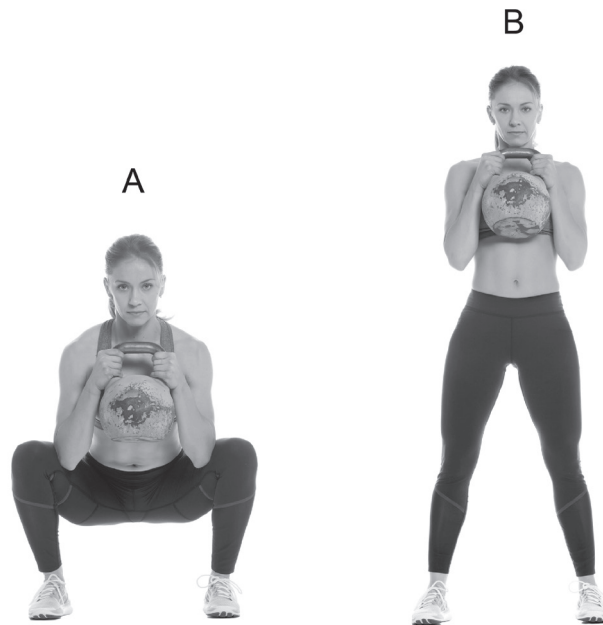
	Bone	Axial or appendicular	Function
A.	Coccyx	Appendicular	Supports posture
B.	Scapula	Appendicular	Attachment for latissimus dorsi
C.	Vertebrae	Axial	Movement of torso
D.	Clavicle	Axial	Stability of shoulder joint

14. The diagram shows a cricketer bowling a ball with their right arm. What is the movement of the bowling arm at the shoulder joint?



- A. Extension
- B. Retraction
- C. Circumduction
- D. Depression

15. The diagram shows an athlete lifting a kettlebell. Which muscle is contracted and what type of contraction occurs as the athlete moves from position A to position B?

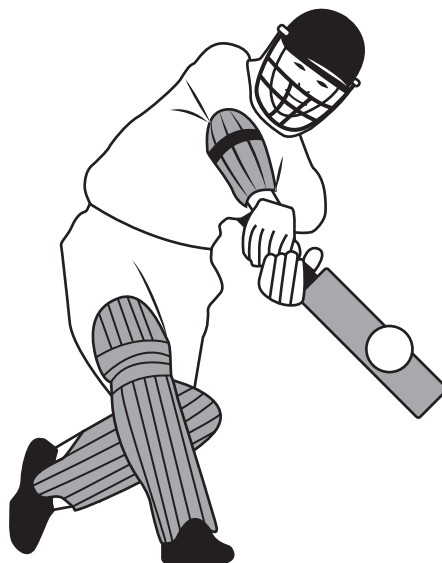


	Muscle	Contraction
A.	Semitendinosus	Isometric
B.	Rectus femoris	Isotonic concentric
C.	Gluteus maximus	Isotonic eccentric
D.	Trapezius	Isokinetic

16. An athlete throws a javelin during practice. Which throw will travel the farthest distance?

	Throw	Angle of release / degrees	Height of release / m	Speed of release / ms ⁻¹
A.	1	40	2.0	20
B.	2	40	2.0	30
C.	3	35	2.0	20
D.	4	35	2.0	30

17. A soccer (football) player coordinates the movement of the leg through the sagittal plane to kick a ball optimally. What is demonstrated?
- A. Summing joint forces
 - B. Line of gravity
 - C. Linear motion
 - D. Angular momentum
18. A tennis player's racket connects with the ball. What is this phase of movement?
- A. Preparatory
 - B. Critical instant
 - C. Force production
 - D. Follow-through
19. The diagram shows a cricket player batting a ball. Which illustrates Newton's second law of motion when batting in cricket?



- A. The bat applies an equal and opposite force to the ball on impact.
- B. The ball exerts a force on the bat when it is hit.
- C. The force of the bat changes the mass of the ball, causing it to accelerate.
- D. The ball accelerates in proportion to the force that the bat gives it.

- 20.** An athlete has a concussion. What is the initial stage for recovery?
- A. Symptom-limited activity
 - B. Non-contact training drills
 - C. Light aerobic exercise
 - D. Sport-specific exercises
- 21.** Which is an example of an internal risk factor?
- A. A prior knee injury
 - B. Playing on synthetic grass
 - C. Wearing a chest protector
 - D. The goalkeeper position
- 22.** A basketball player enjoys talking and interacting with teammates and demonstrates self-discipline during the game. Which personality traits does this player exhibit?
- A. Openness to experience and mental toughness
 - B. Agreeableness and neuroticism
 - C. Extroversion and conscientiousness
 - D. Introversion and emotional stability
- 23.** Which is an example of a broad external attentional focus?
- A. A volleyball player focusing on throwing the ball up for the serve
 - B. A netball player using self-talk for the stages in a chest pass
 - C. A football player examining the positions of the opponents before passing the ball
 - D. A golfer focusing on the swing of their club

- 24.** Which demonstrates the cognitive phase of learning a skill?
- A. A baseball player hits balls in a batting cage to maintain consistency.
 - B. A rock climber uses verbal cues to remember correct technique.
 - C. A basketball player can perform a jump shot with coordinated movements.
 - D. An archer can hit the target with accuracy.
- 25.** Using previous experience, a soccer (football) team makes shorter passes because of wet conditions on the field. What is this theory?
- A. Goal orientation theory
 - B. Ecological dynamics theory
 - C. Attribution theory
 - D. Signal detection theory
- 26.** An athlete practices new skills to be accepted by their teammates in a sport the athlete is forced to play. What needs are met in relation to self-determination theory?
- A. High autonomy, high competency
 - B. Low competency, low relatedness
 - C. High relatedness, low autonomy
 - D. Low autonomy, high competency
- 27.** Which of these supports a task-oriented motivation?
- I. Provide easily accomplished tasks
 - II. Focus on positive feedback
 - III. Gradual increase in task difficulty
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III

- 28.** A player uses self-talk during a soccer (football) game. Which of these examples of self-talk is a problem-focused coping strategy?
- A. “Take deep breaths to calm down when I get nervous.”
 - B. “When I receive a pass, I will speed up to beat the defender.”
 - C. “This is a big game, I am not sure I have practiced enough.”
 - D. “I didn’t take the shot; my legs are tired.”
- 29.** Which coping strategy is emotion focused?
- A. An athlete makes changes in their practice routine after a loss.
 - B. An athlete uses positive self-talk to prepare for the next game.
 - C. An athlete walks away from a teammate when being corrected.
 - D. An athlete asks a teammate for feedback after a poor performance.
- 30.** Which is a process goal?
- A. Winning a tournament
 - B. Achieving a personal best time in a race
 - C. Selection for an elite team
 - D. Refining a technique
-

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