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Sports, exercise and health science
Standard level
Paper 1

Wednesday 3 November 2021 (morning)

45 minutes

Instructions to candidates

- 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.
- The maximum mark for this examination paper is **[30 marks]**.

1. What is the primary function of the skull and vertebral column?

- A. Attachment
- B. Movement
- C. Support
- D. Protection

2. Which type of joint provides the greatest degree of movement?

- A. Fibrous
- B. Synovial
- C. Cartilaginous
- D. Gliding

3. Which defines the origin of a muscle?

- A. The attachment of a muscle tendon to a stationary bone
- B. The attachment of a muscle tendon to a movable bone
- C. The attachment of a muscle tendon to an immovable joint
- D. The attachment of a muscle tendon to a movable joint

4. Which four are principal structures of the ventilatory system?

A.	Nose	Lungs	Epiphysis	Larynx
B.	Alveoli	Lungs	Larynx	Epiphysis
C.	Larynx	Trachea	Bronchi	Lungs
D.	Lungs	Bronchi	Nucleus	Alveoli

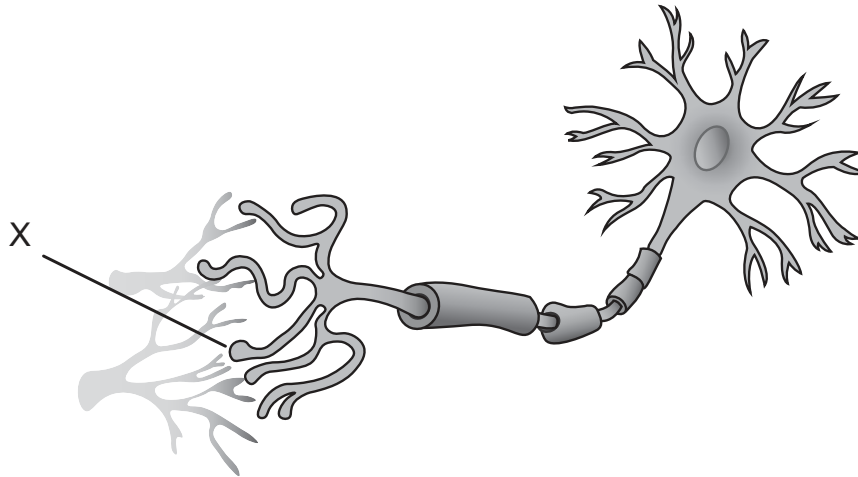
5. What is total lung capacity?
- A. The volume of air in the lungs after a maximum inhalation
 - B. The maximum volume of air that can be exhaled after a maximum inhalation
 - C. The volume of air in excess of tidal volume that can be exhaled forcibly
 - D. The volume of air still contained in the lungs after a maximal exhalation
6. Which does blood transport?
- I. Proteins
 - II. Hormones
 - III. Platelets
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III
7. Which circulation is responsible for the exchange of oxygen between the blood and the lungs?
- A. Systemic circulation
 - B. Coronary circulation
 - C. Pulmonary circulation
 - D. Vascular circulation
8. What changes occur to a boxer's stroke volume and heart rate while punching during a bout?

	Stroke volume	Heart rate
A.	Increase	Increase
B.	No change	Increase
C.	Increase	Decrease
D.	Decrease	Increase

Turn over

9. What action of the heart is responsible for the force of systolic pressure as measured on the walls of the aorta?
- A. Aortic contraction
 - B. Aortic relaxation
 - C. Ventricular relaxation
 - D. Ventricular contraction
10. Which is considered a micronutrient?
- A. Lipid
 - B. Vitamin
 - C. Water
 - D. Protein
11. While celebrating with their team, a basketball player wants to eat a pizza that contains unsaturated fatty acids. Which will contain the most unsaturated fatty acids?
- A. Pepperoni
 - B. Olives
 - C. Coconut
 - D. Cheese
12. Which reaction represents aerobic catabolism?
- A. Gluconeogenesis
 - B. Lactate formation
 - C. Electron transport chain
 - D. Protein synthesis

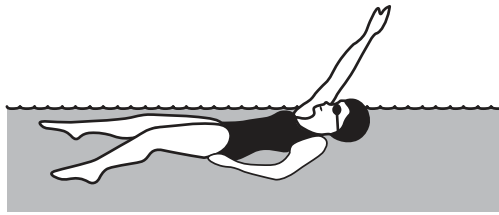
13. Where is glycogen primarily stored in the body?
- A. The liver and brain
 - B. The liver and skeletal muscle
 - C. Cardiac muscle and the brain
 - D. Cardiac muscle and the liver
14. Which donates a phosphate group to adenosine diphosphate (ADP) during the initial stages of intense exercise to regenerate adenosine triphosphate (ATP)?
- A. Glycogen
 - B. Glucose-6-phosphate
 - C. Amino acid
 - D. Creatine phosphate
15. The diagram shows a motor unit. What structure is labelled X?



- A. Dendrite
- B. Axon
- C. Cell body
- D. Synapse

Turn over

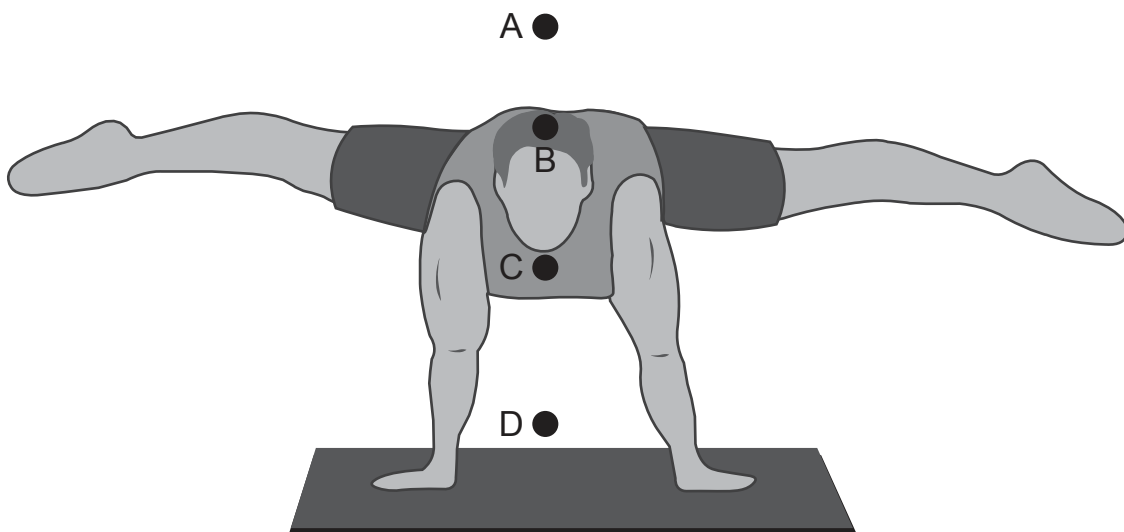
16. The diagram shows a swimmer performing backstroke. What type of movement correctly describes the motion at the shoulder joint?



- A. Circumduction
 - B. Eversion
 - C. Adduction
 - D. Supination
17. Which term is correctly matched to the type of quantity that it measures?

	Term	Quantity
A.	Acceleration	Scalar
B.	Displacement	Vector
C.	Distance	Vector
D.	Speed	Vector

18. The diagram shows a gymnast. Which represents the correct location for the centre of mass?



19. A golfer wants to increase the force applied to their golf ball to make it travel further. Assuming the ball will be hit with the same acceleration each time, which golf club should they use?



- A. The longest golf club
 - B. The heaviest golf club
 - C. The lightest golf club
 - D. The widest golf club head
20. When a golfer hits a golf ball with backspin, what is the effect of the spin on the ball?
- A. It will create lift and bring the ball back down to the ground sooner.
 - B. It will generate a force that will cause the ball to curve to the side.
 - C. It will not alter the flight of the ball.
 - D. It will create lift and keep the ball in the air longer.

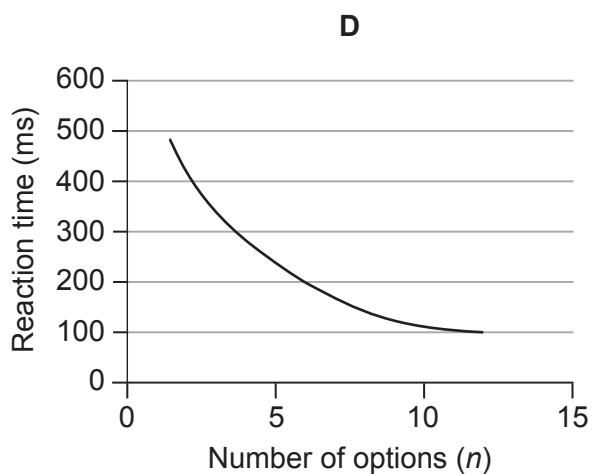
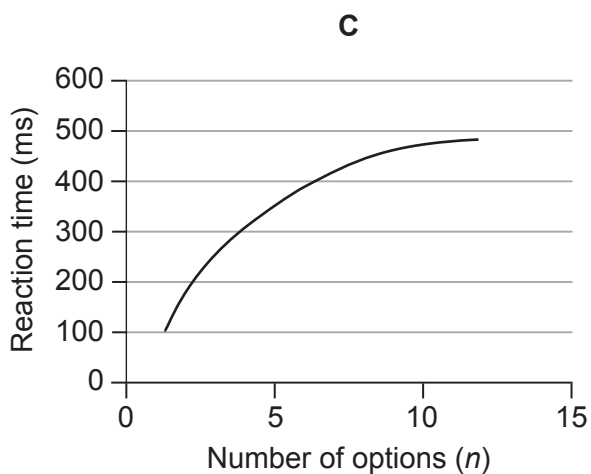
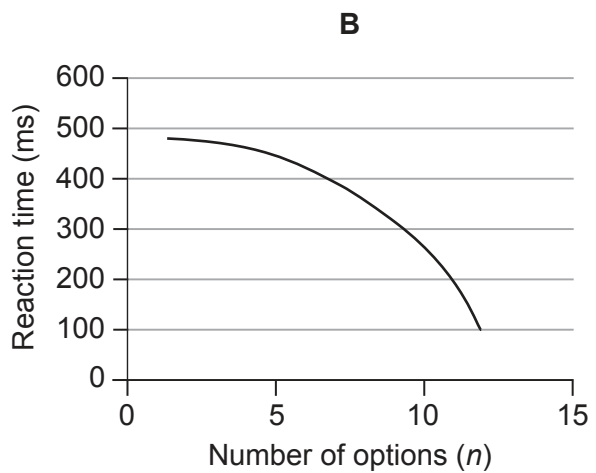
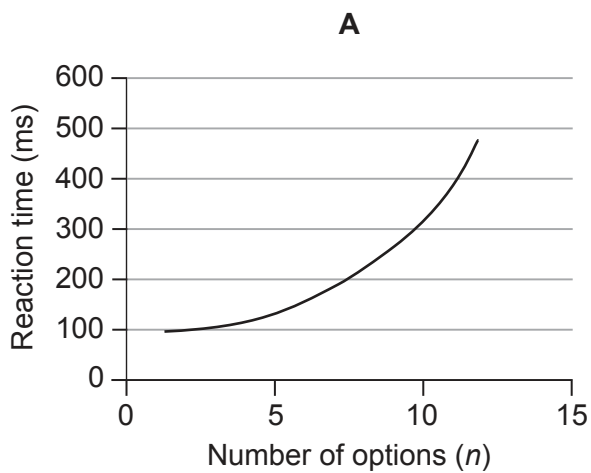
21. The diagram shows a field hockey player. What is the correct classification of motor skills for dribbling in hockey?



A.	Gross	Serial	Open
B.	Fine	Serial	Closed
C.	Gross	Discrete	Open
D.	Fine	Discrete	Closed

22. Which phrase describes technique?
- A. Learned movements that are specific to a certain task
 - B. The way in which a specific sports skill is performed
 - C. The general capacity of an individual to perform well
 - D. Characteristics that allow for effective learning
23. What is the relationship between ability, skill and technique?
- A. Skill = ability + technique
 - B. Technique = ability + skill
 - C. Skill = ability × technique
 - D. Technique = ability – skill

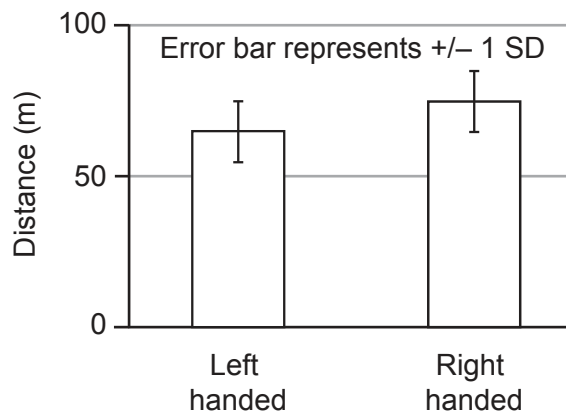
24. What is response time?
- A. The amount of time between the stimulus and the initiation of the movement
 - B. The amount of time between the stimulus and the completion of movement
 - C. Response time = movement time – reaction time
 - D. The amount of time from the initiation of a movement to the completion of a movement
25. The graphs represent how reaction time changes when additional possible outcomes are introduced into a situation. Which graph represents Hick's Law?



Turn over

26. Which type of transfer is best demonstrated when a baseball player learns to hit a ball both left handed and right handed?
- A. Skill to skill
 - B. Stage to stage
 - C. Bilateral
 - D. Practice to performance

27. A group of baseball players hit both left handed and right handed. The mean distance travelled by the ball is shown in the chart. What might be concluded about the statistical significance of the data?



- A. LH group hits significantly further than the RH group.
 - B. RH group hits significantly further than the LH group.
 - C. LH group hits significantly shorter than the RH group.
 - D. RH group does not hit significantly further than the LH group.
28. A student measures flexibility using five trials of the sit and reach test. They record the same result for each trial for the first participant. Which does this provide evidence for?
- A. Specificity
 - B. Accuracy
 - C. Reliability
 - D. Validity

29. Alex signs up at the local gym and is required to complete a Physical Activity Readiness Questionnaire (PAR-Q). What is the purpose of this questionnaire?
- A. To determine their level of fitness
 - B. To determine how long they will be able to exercise for
 - C. To determine their pre-existing skill level
 - D. To determine their pre-existing health conditions
30. A track athlete runs 800 m at 5-minute intervals over 30 minutes. Which element of their general training programme is this?
- A. Endurance training
 - B. Progression
 - C. Resistance training
 - D. Reversibility
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References:

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