Diploma Programme
Programme du diplôme
Programa del Diploma

Sports, exercise and health science
Standard level
Paper 1

Tuesday 8 November 2016 (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]**.

8816 – 6601

1. What type of bones are the phalanges?

A. Flat bones

B. Long bones

C. Short bones

D. Irregular bones

2. What is the definition of the term *insertion* of a muscle?

A. The attachment of a muscle tendon to a moveable bone

B. The attachment of a muscle tendon to a stationary bone

C. A muscle contraction where there is movement at a joint

D. A muscle contraction where there is no movement at a joint

3. Which muscle is on the anterior region of the body?

A. Soleus

B. Pectoralis

C. Biceps femoris

D. Latissimus dorsi

4. What are the principal structures of the ventilatory system?

A. Mouth, trachea, ribs, intercostal muscles

B. Nose, pharynx, aorta, diaphragm

C. Nose, trachea, bronchioles, alveoli

D. Mouth, larynx, diaphragm, lungs

5. What are the functions of the nose during inspiration?

I. To moisten the air

II. To diffuse oxygen from the air

III. To filter the air

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

6. Which combination is used to calculate vital capacity?

A. Total lung capacity + expiratory reserve volume + tidal volume

B. Total lung capacity + residual volume + expiratory reserve volume

C. Inspiratory reserve volume + expiratory capacity + residual volume

D. Inspiratory reserve volume + tidal volume + expiratory reserve volume

7. What is the relationship between heart rate, cardiac output and stroke volume?

A. Cardiac output = stroke volume x heart rate

B. Cardiac output = stroke volume + heart rate

C. Cardiac output = stroke volume − heart rate

D. Cardiac output = stroke volume ÷ heart rate

8. What percentage of oxygen in the blood is transported by hemoglobin as oxyhemoglobin within red blood cells?

A. 68 %

B. 95 %

C. 98.5 %

D. 99.5 %

9. Which cardiovascular adaptions are a result of endurance exercise training?

I. Increased stroke volume

II. Lower resting heart rate

III. Increased exercising heart rate

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

10. Which is a micronutrient?

A. Lipid

B. Fibre

C. Water

D. Protein

11. Which is an unsaturated fat?

A. Palm oil

B. Olive oil

C. Tropical oil

D. Coconut oil

12. What is the chemical composition of a protein molecule?

A. Oxygen and nitrogen

B. Carbon, oxygen and nitrogen

C. Hydrogen, nitrogen and oxygen

D. Carbon, hydrogen, oxygen and nitrogen

13. Which are major triglyceride storage sites?

A. Adipose tissue and liver tissue

B. Adipose tissue and cardiac muscle

C. Adipose tissue and nerve tissue

D. Adipose tissue and skeletal muscle

14. What is the definition of *cell respiration*?

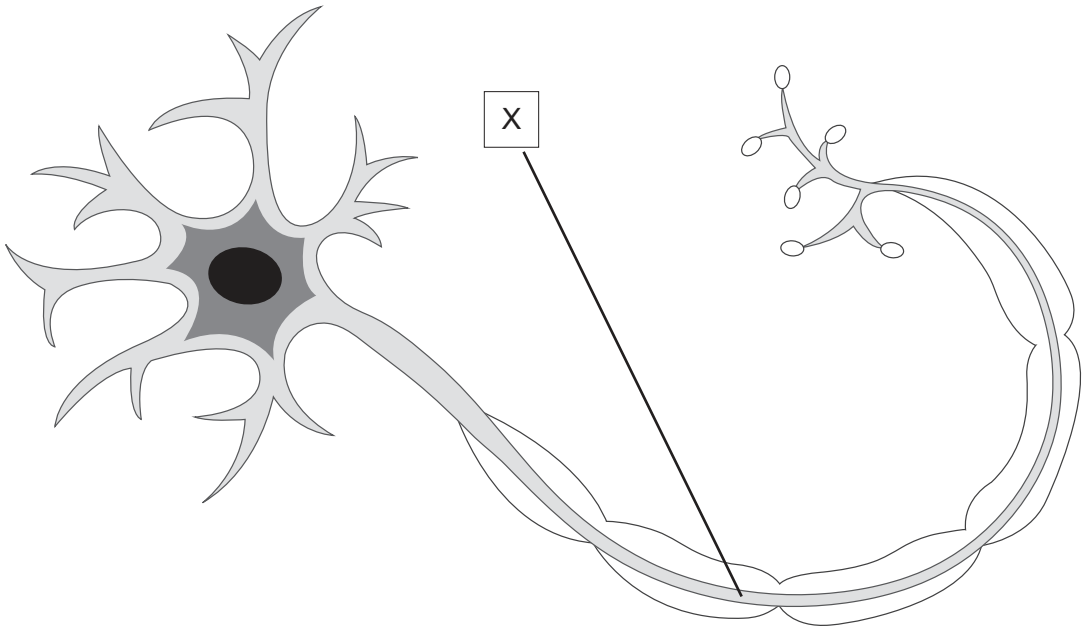
A. All biochemical reactions that occur within an organism

B. The controlled release of energy from organic compounds in the form of ATP

C. Energy requiring reactions whereby small molecules are built up into larger ones

D. Chemical reactions that break down complex organic compounds into simpler ones

15. Which structure of the motor unit is labelled X in the diagram below?



[Source: From www.bbc.co.uk reproduced by permission of the BBC]

A. Axon

B. Cell body

C. Dendrite

D. Motor end plate

16. Which are vector quantities?

I. Momentum
II. Speed
III. Velocity

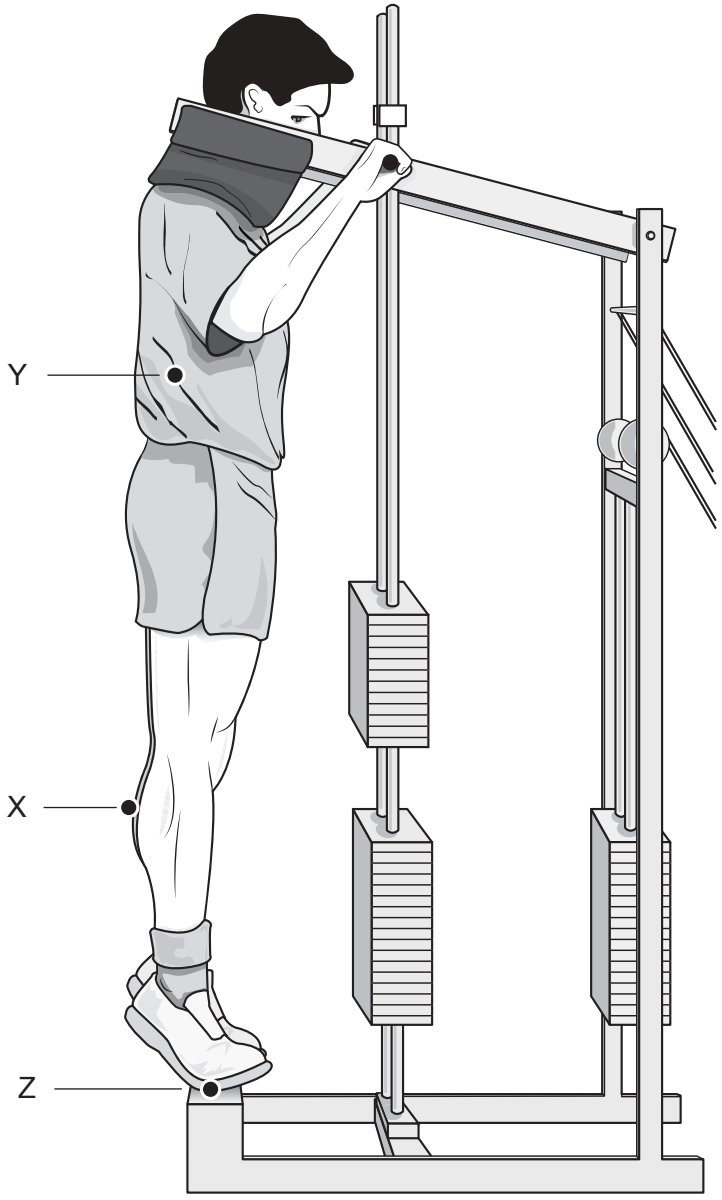
A. I and II only

B. I and III only

C. II and III only

D. I, II and III

17. The diagram below shows an athlete performing a heel raise. Which of the labels are correct for a second class lever?



[Source: adapted from www.musclemotivation.com]

	Load	Fulcrum	Effort
A.	Y	X	Z
B.	X	Z	Y
C.	Y	Z	X
D.	Z	Y	X

18. Which applies when an ice skater extends their arms and leg while spinning?

	Moment of inertia	Angular velocity
A.	Increases	Decreases
B.	Decreases	Decreases
C.	Increases	Increases
D.	Decreases	Increases

19. Which affects the flight path of a javelin when released?

A. Speed

B. Centre of mass

C. Moment of inertia

D. Displacement

20. Which equation represents the relationship between technique, skill and ability?

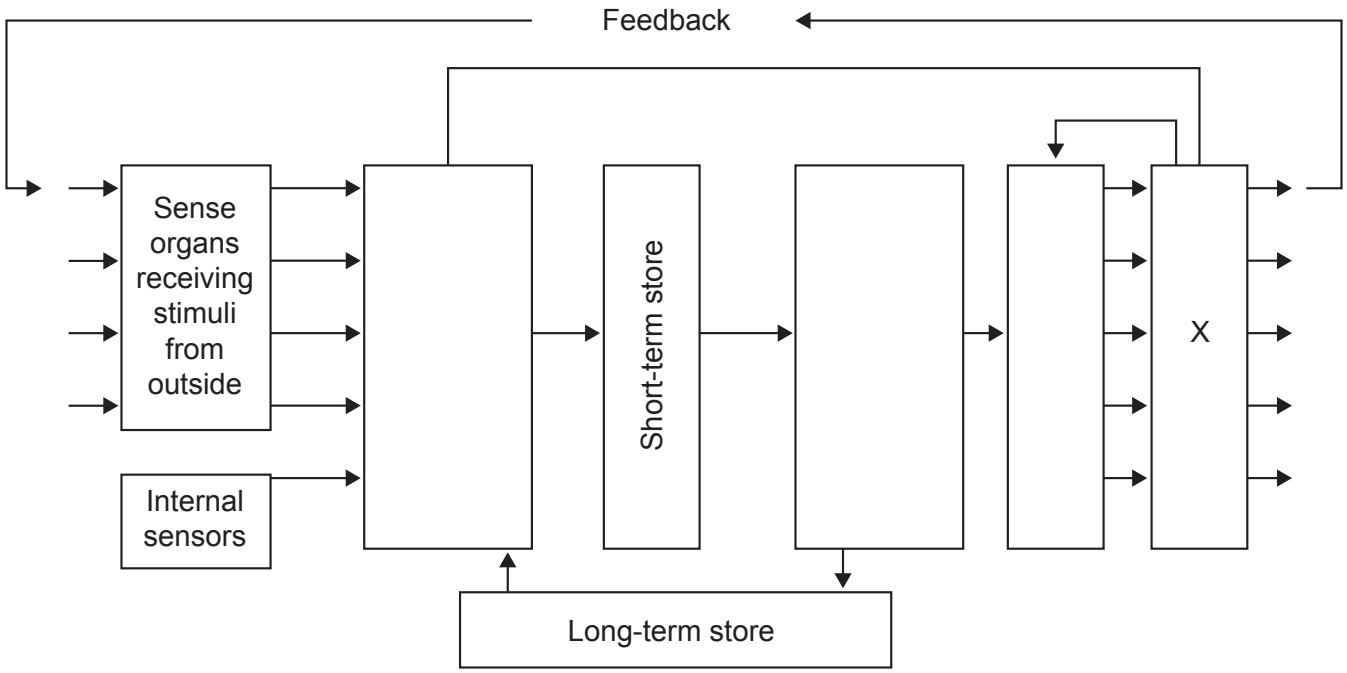
A. Selection of an appropriate technique = skill + ability

B. Skill = ability + selection of an appropriate technique

C. Ability = skill × selection of an appropriate technique

D. Skill = selection of an appropriate technique – ability

21. Which component of Welford's model is labelled X in the diagram below?



A. Effectors

B. Perception

C. Effector control

D. Decision making

22. Which term explains deception in sport?

A. Reaction time

B. Response time

C. Selective attention

D. Psychological refractory period

23. Which describes a motor programme?

A. The act of performing a movement at a specific time

B. Consistent production of goal-oriented movements

C. Adaptation of performance based on feedback

D. Set of movements stored as a whole in the memory

24. What is the order of the learning phases (stages) for a performer acquiring new skills?

A. Associative → cognitive → professional

B. Cognitive → associative → autonomous

C. Associative → cognitive → autonomous

D. Cognitive → autonomous → professional

25. Which is an example of a bilateral transfer of learning?

A. A football kick improving a player's rugby kick

B. From "three on three" basketball to the full game

C. Left hand spike in volleyball improving a right hand spike

D. Improving leg power to jump higher in a high jump competition

26. What does PAR-Q stand for?

A. Physical activity readiness questionnaire

B. Physiological activity readiness quantifier

C. Physiological assessment regularity quantifier

D. Physical assessment readiness questionnaire

27. What is the mean of these three javelin throws?

Throw 1: 40 metres; Throw 2: 53 metres; Throw 3: 60 metres

A. 40 metres

B. 45 metres

C. 51 metres

D. 53 metres

28. Which are tests for body composition?

I. Body mass index
II. Anthropometry
III. Underwater weighing

A. I and II only
B. I and III only
C. II and III only
D. I, II and III

29. Which is a health-related fitness component?

A. Speed
B. Power
C. Reaction time
D. Muscular strength

30. Which component of fitness is estimated when undertaking Cooper's 12 Minute Run?

A. Agility
B. Muscular endurance
C. Coordination
D. Aerobic capacity