Diploma Programme
Programme du diplôme
Programa del Diploma

Sports, exercise and health science
Standard level
Paper 1

Thursday 10 May 2018 (afternoon)

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]**.

2218 – 6604

1. Which structure forms part of a long bone?

A. Bursae

B. Articular capsule

C. Meniscus

D. Articular cartilage

2. What type of bone is the skull?

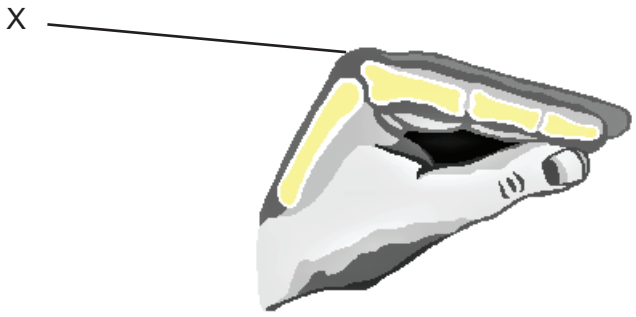
A. Long

B. Short

C. Flat

D. Irregular

3. The diagram shows a hand. What type of joint is labelled X?



[Source: © International Baccalaureate Organization 2018]

A. Hinge

B. Saddle

C. Condyloid

D. Pivot

4. Which structure is responsible for moistening air entering the ventilatory system?

A. Bronchi

B. Larynx

C. Pharynx

D. Nose

5. Which statement describes the movement of the diaphragm during inhalation?

A. The diaphragm moves downward to reduce pressure in the thoracic cavity.

B. The diaphragm moves upward to reduce pressure in the thoracic cavity.

C. The diaphragm moves downward to increase the pressure in the thoracic cavity.

D. The diaphragm moves upward to increase the pressure in the thoracic cavity.

6. Which feedback mechanisms are associated with the chemical control of ventilation during exercise?

A. Lung stretch receptors

B. Muscle proprioreceptors

C. Increases in blood acidity levels

D. Increases in temperature

7. What does diastolic blood pressure measure?

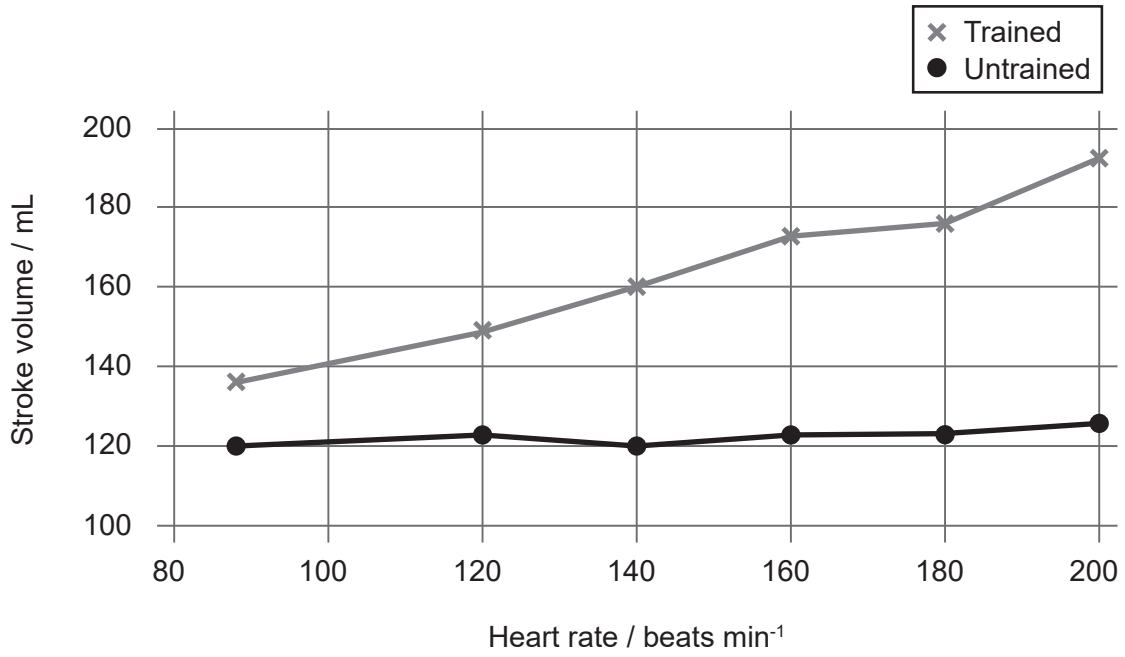
A. The force exerted by blood on arterial walls during atrial contraction

B. The force exerted by blood on arterial walls during atrial relaxation

C. The force exerted by blood on arterial walls during ventricular contraction

D. The force exerted by blood on arterial walls during ventricular relaxation

8. The graph shows the stroke volume and heart rate for trained and untrained athletes. What is the reason for the difference in stroke volume?



[Source: Dr. James Eldridge, http://general.utpb.edu/fac/eldridge_j/PHED6360/cardiovascular_training_adaptati.htm]

A. Increased left ventricular volume

B. Increased capillarization

C. Increased arterio-venous oxygen difference

D. Increased resting heart rate

9. What is transported in the pulmonary artery?

A. Oxygenated blood to working muscles

B. Deoxygenated blood to working muscles

C. Deoxygenated blood to the lungs

D. Oxygenated blood to the lungs

10. What is the ratio of C to H to O in a glucose molecule?

A. 1:3:1

B. 1:2:1

C. 1:3:2

D. 1:2:2

11. A condensation reaction can combine glucose molecules to form

I. Monosaccharides

II. Disaccharides

III. Polysaccharides

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

12. What is aerobic catabolism?

A. A chemical reaction requiring energy to build larger molecules from smaller molecules in the presence of oxygen

B. A chemical reaction requiring energy to build larger molecules from smaller molecules in the absence of oxygen

C. Chemical reactions that break down complex organic compounds into simpler compounds in the presence of oxygen

D. Chemical reactions that break down complex organic compounds into simpler compounds in the absence of oxygen

13. Which of the following store(s) glycogen?

I. Adipose tissue

II. Liver

III. Skeletal muscle

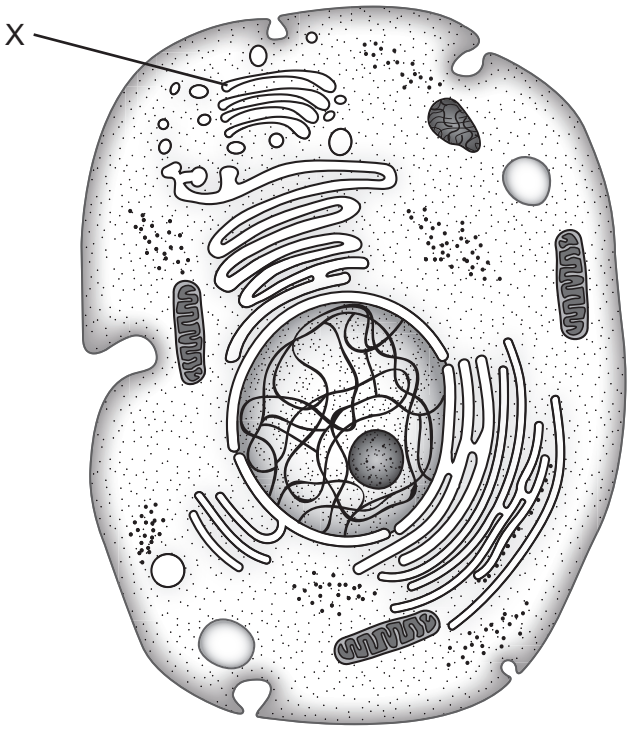
A. II only

B. I and III only

C. II and III only

D. I, II and III

14. The diagram shows an animal cell. What is the structure labelled X?



[Source: Siyavula Education, Grade 10 Life Science: Cell Structure And Function, https://www.siyavula.com/read/science/grade-10-lifesciences/cells-the-basic-units-of-life/02-cells-the-basic-units-of-life-02. Everything Maths and Sciences textbooks can be freely downloaded at www.siyavula.com. Republished under Creative Commons Attribution 4.0 International licence, https://creativecommons.org/licenses/by/4.0/legalcode.]

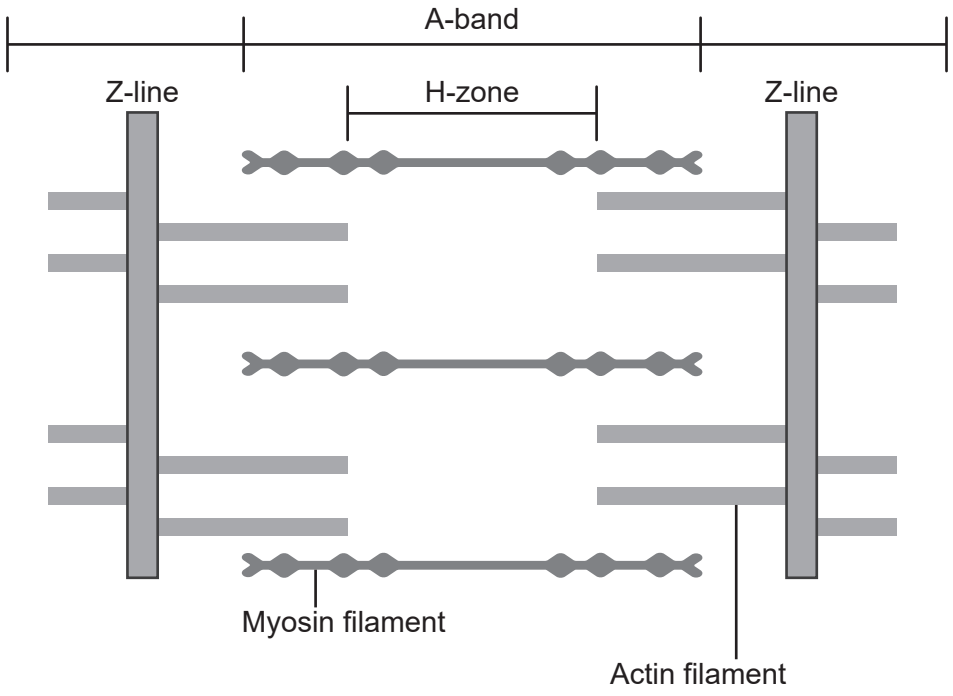
A. Golgi apparatus

B. Nucleus

C. Endoplasmic reticulum

D. Mitochondrion

15. The diagram shows the structure of the muscle responsible for contraction. What happens during contraction?



[Source: adapted from http://www.teachpe.com]

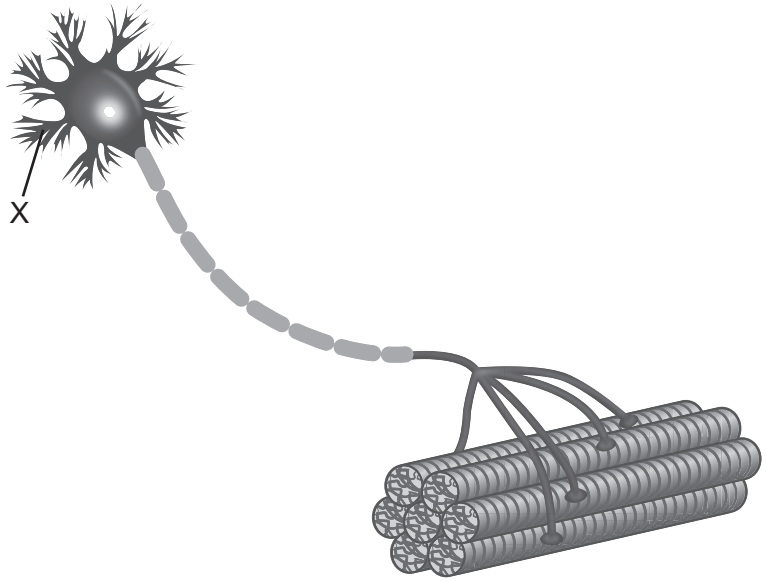
A. The H-zone lengthens

B. The H-zone shortens

C. The A-band lengthens

D. The A-band shortens

16. The diagram shows a motor unit. What is the structure labelled X?



[Source: By Designua / Shutterstock]

A. Synapse

B. Axon

C. Dendrite

D. Nucleus

17. Which describes concentric contractions?

A. Muscle lengthening

B. Muscle shortening

C. Muscle length does not change

D. Force in muscle remains constant through full range of movement

18. What type of exercise contributes to development of delayed onset muscle soreness (DOMS)?

A. Concentric exercise

B. Eccentric exercise

C. Isometric exercise

D. Isokinetic exercise

19. What is displacement?

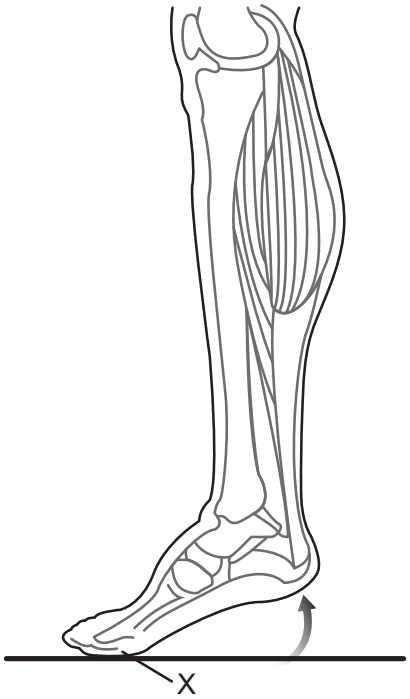
A. The rate of change in the position of an object

B. The total length along the path an object has followed

C. The overall change in the position of an object

D. The speed of an object in a given direction

20. The diagram shows the operation of a lever when rising up on the toes. What part of the lever is labelled X?



[Source: Adapted from MARTINI, FREDERIC H.; NATH, JUDI L.; BARTHOLOMEW, EDWIN F., FUNDAMENTALS OF ANATOMY & PHYSIOLOGY, 11th, ©2018. Reprinted by permission of Pearson Education, Inc., New York, New York.]

A. Fulcrum

B. Effort

C. Load

D. Resistance

21. What is skill?

A. A general trait or capacity of an individual

B. A procedure for completing a task

C. The way an action is learned

D. The consistent production of goal-oriented movements

22. What is an example of a serial skill?

A. Riding a bicycle

B. Playing tennis

C. Hitting a golf ball

D. Performing a gymnastics routine

23. In the diagram of Welford's model of information processing, what is represented by X?

Removed for copyright reasons

A. Long-term memory

B. Short-term memory

C. Sense organs

D. Effector control

24. What is coding in memory improvement?

A. Remembering short and specific details rather than long and vague information

B. Presenting information in a clear and logical format

C. Associating information with images

D. Storing information through repetition

25. Which describes knowledge of results feedback?

A. The coach describing the quality of a performance

B. The coach providing technique information after a performance

C. A basketball player seeing that the ball went into the basket

D. A basketball player analysing their technique on replay

26. When is massed practice most suitable?

A. For performers with low motivation

B. For performers with high motivation

C. For performers practising open skills

D. For performers practising closed skills

27. Why is heart rate used to monitor exercise intensity?

A. Due to its relationship with breathing

B. Due to its relationship with oxygen uptake

C. It is an accurate measure of perceived exertion

D. It is an accurate measure of gaseous exchange

28. What is the coefficient of variation?

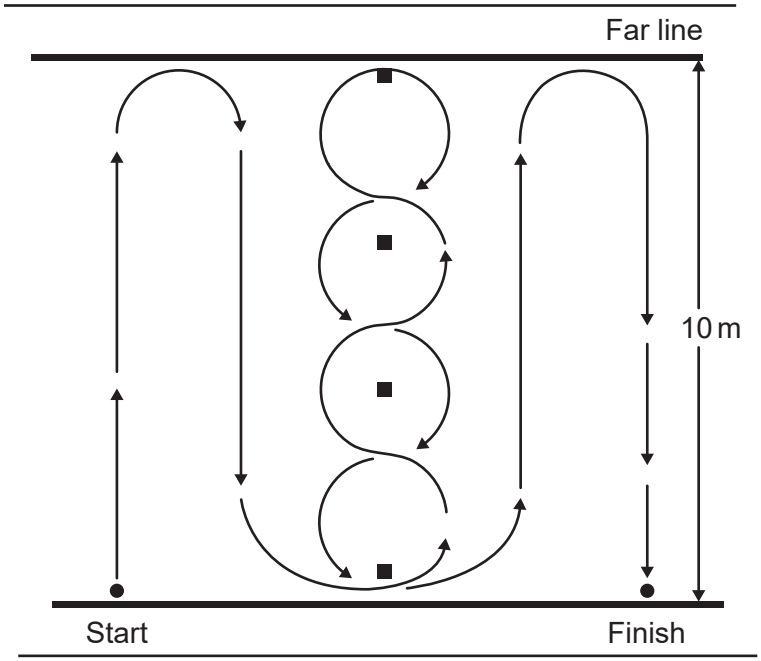
A. The spread of values around the mean

B. The measure of the statistical accuracy of an estimate of the distribution

C. The ratio of the standard deviation to the mean expressed as a percentage

D. The statistical measure that indicates the extent to which two or more variables fluctuate together

29. The diagram shows the set-up for a fitness test. What fitness component is being tested?



[Source: adapted from http://www.police.nsw.gov.au]

A. Speed

B. Reaction time

C. Agility

D. Aerobic capacity

30. Which are key principles of training programme design?

I. Overload

II. Variety

III. Resistance

A. I and II only

B. I and III only

C. II and III only

D. I, II and III