M12/4/SPEXS/SPM/ENG/TZ0/XX

22126601

International Baccalaureate®
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SPORTS, EXERCISE AND HEALTH SCIENCE
STANDARD LEVEL
PAPER 1

Thursday 10 May 2012 (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]*.

2212-6601

1. Which bone is part of the appendicular skeleton?

A. Skull

B. Vertebral column

C. Humerus

D. Sternum

2. What best describes synovial joints?

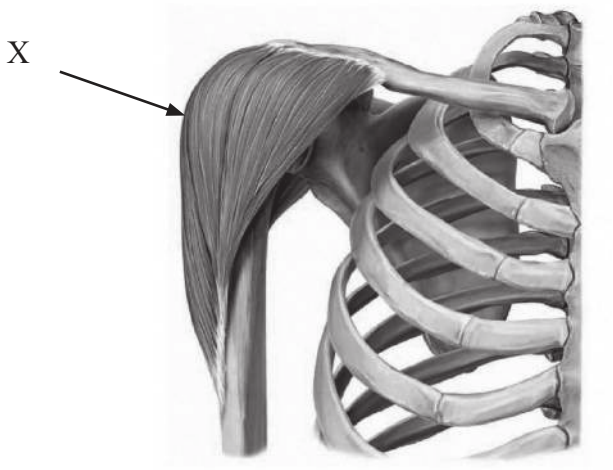
A. They permit no movement.

B. They are freely moveable.

C. They are tightly connected by cartilage.

D. They permit only slight movement.

3. What is the name of the skeletal muscle indicated by X?



A. Pectoralis

B. Trapezius

C. Iliopsoas

D. Deltoid

4. What is a basic function of the interior structure of the nose during respiration?

A. To provide a passageway for food

B. To create friction during breathing

C. To warm and moisten incoming air

D. To prevent the lungs from collapsing

5. Which is an example of a blood cell?

I. Leucocyte
II. Platelet
III. Plasma

A. I only

B. I and II only

C. II and III only

D. I, II and III

6. What is the definition of *systolic blood pressure*?

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

B. The lowest pressure in the arteries during systole

C. The blood pressure flowing into the right ventricle

D. The friction between blood and the blood vessel walls

7. Which correctly describes pulmonary circulation?

A. left ventricle → pulmonary veins → lungs

B. right ventricle → pulmonary arteries → lungs

C. right atrium → pulmonary veins → lungs

D. left atrium → pulmonary arteries → lungs

8. Which of the following occurs when an athlete moves from a stationary position to slow running?

A. An increase in cardiac output with no change in stroke volume

B. No increase in cardiac output but an increase in stroke volume

C. No increase in cardiac output and heart rate

D. An increase in cardiac output and stroke volume

9. What causes ventilation to increase during exercise?

A. Increased carbon dioxide level

B. High pH

C. Decreased blood acidity level

D. Lower carbon dioxide level

10. Which statement is correct for an athlete performing the Fosbury Flop high jump technique?

A. The centre of mass remains inside the body during flight.

B. The centre of mass moves outside the body during flight.

C. The centre of mass remains fixed outside the body during flight.

D. The centre of mass remains fixed inside the body during flight.

11. What is the composition of a triacyglycerol?

A. Three glycerols and one fatty acid

B. One glycerol and three fatty acids

C. Two glycerols and one fatty acid

D. Three glycerols and three fatty acids

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. What is the approximate energy content per 100 g of protein?

A. 17.2 kJ

B. 172 kJ

C. 1720 kJ

D. 1760 kJ

14. Which of the following are major sites of triglyceride storage?

A. Adipose tissue and bone tissue

B. Adipose tissue and cardiac muscle tissue

C. Adipose tissue and skeletal muscle tissue

D. Adipose tissue and nervous tissue

15. Which is classified as a macronutrient?

A. Carbohydrate

B. Vitamins

C. Minerals

D. Fibre

16. Which of the following are parts of a motor unit?

A. Dendrite, cell body, nucleus and axon

B. Dendrite, cell body, tendon and muscle

C. Dendrite, cell body, cartilage and axon

D. Dendrite, cell body, ligament and muscle

17. Which combination of muscle action is correct for figures 1, 2 and 3?

Figure 1 (no movement)

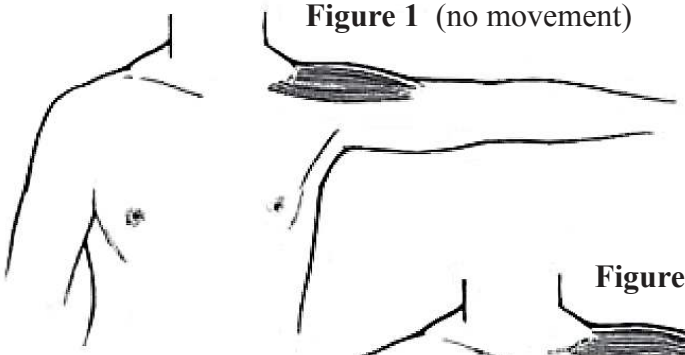


Figure 2 (muscle shortens)

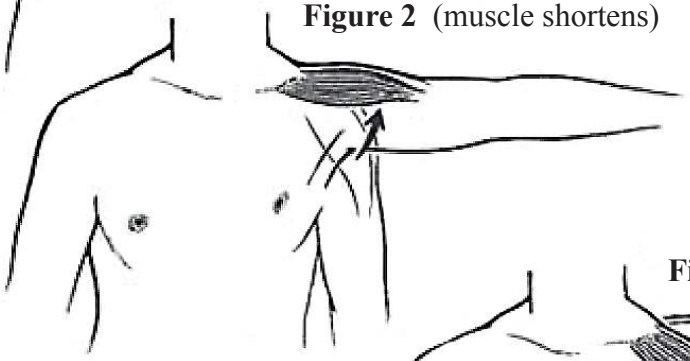
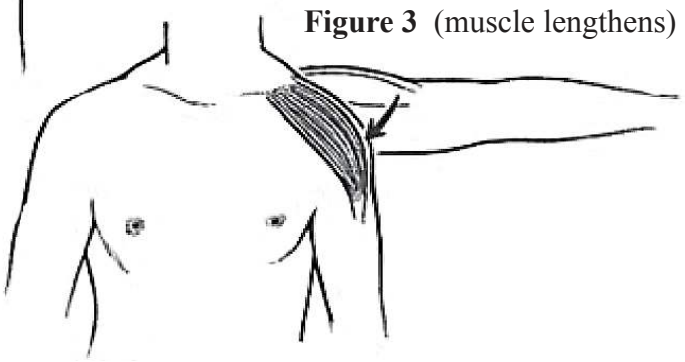
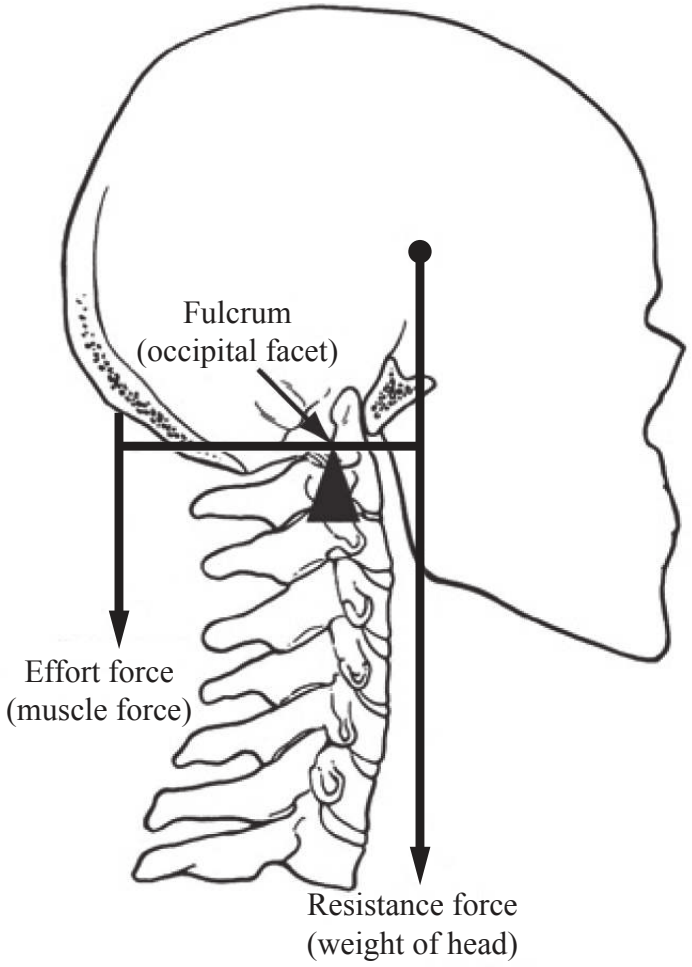


Figure 3 (muscle lengthens)



	1	2	3
A.	isometric	eccentric	concentric
B.	eccentric	isometric	concentric
C.	concentric	isometric	eccentric
D.	isometric	concentric	eccentric

18. Which class of lever system is shown below?



A. First

B. Second

C. Third

D. Both first and third

19. What is the definition of the term *impulse*?

A. The rate of change of velocity

B. A force that acts in opposite to the movement of one surface on another

C. The product of force multiplied by the time during which the force acts

D. The speed of an object in a given direction

20. Which of the following is a perceptual motor ability?

A. Trunk strength

B. Dynamic flexibility

C. Gross body equilibrium

D. Reaction time

21. What is the relationship between angular momentum, moment of inertia and angular velocity?

A. Angular velocity is the product of angular momentum and moment of inertia.

B. Moment of inertia is the product of angular momentum and angular velocity.

C. Angular momentum is the product of moment of inertia and angular velocity.

D. Angular momentum is the result of moment of inertia minus angular velocity.

22. Which activity is an example of an interactive skill?

A. Shooting in archery

B. Playing in a game of hockey

C. Vaulting in gymnastics

D. Throwing a javelin

23. Where is the origin of interoceptor feedback?

A. Blood vessels, visceral organs and the nervous system

B. Muscles, tendons and joints

C. Mouth, nose and eyes

D. Inner ear, skin and hair

24. Which describes learning in a negative acceleration curve?

A. It is in a period of transition.

B. It starts slowly but speeds up.

C. It is faster in the earlier stages.

D. It is directly related to the number of trials.

25. Which sprinter has the fastest response time off the blocks?

	Sprinter			
	1	**2**	**3**	**4**
Reaction time / milliseconds	160	170	160	170
Movement time / milliseconds	180	170	165	160

A. 1

B. 2

C. 3

D. 4

26. Which correctly describes the concept of transfer of learning?

A. A change in the capability of a person to perform a skill

B. The sensory feedback that is available when performing a skill

C. The influence of a previously practised skill on the learning of a new skill

D. The act of performing a skill at a specific time and in a specific situation

27. 100 athletes were timed running 800 m. How many would be within ± 2 standard deviations of the mean time?

A. 68

B. 95

C. 65

D. 99

28. Which is a performance-related (skill-related) fitness component?

A. Body composition

B. Aerobic capacity

C. Reaction time

D. Muscular endurance

29. What do error bars represent?

A. The value of the group mean

B. A correlation between two variables

C. The independent variable

D. The standard deviation

30. Which of the following represents the OMNI scale of perceived exertion?

A. 6 (no exertion at all) – 20 (maximal exertion)

B. 1 (no exertion at all) – 20 (maximal exertion)

C. 1 (very, very easy) – 10 (extremely hard)

D. 0 (not tired at all) – 10 (very, very tired)