Diploma Programme
Programme du diplôme
Programa del Diploma

Sports, exercise and health science
Standard level
Paper 1

Monday 15 May 2017 (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]**.

2217 – 6601

1. Which bones form part of the appendicular skeleton?

A. Femur, radius, ribs, patella

B. Coccyx, humerus, ulna, tibia

C. Pelvic girdle, clavicle, fibula, carpals

D. Sternum, phalanges, femur, tarsals

2. Which joint is formed at the proximal head of the femur?

A. Shoulder

B. Elbow

C. Hip

D. Knee

3. What type of joint is found where the radius and carpals articulate?

A. Hinge

B. Ball and socket

C. Gliding

D. Condyloid

4. Which muscles form the quadriceps femoris?

A. Rectus femoris, vastus intermedialis, vastus medialis, vastus lateralis

B. Biceps femoris, vastus intermedialis, vastus medialis, vastus lateralis

C. Rectus femoris, biceps femoris, vastus medialis, semitendinosus

D. Biceps femoris, vastus intermedialis, biceps brachii, vastus lateralis

5. What factors may cause ventilation to increase during exercise?

A. Decreased oxygen levels and decreased blood acidity

B. Decreased carbon dioxide levels and increased blood acidity

C. Increased carbon dioxide levels and increased blood acidity

D. Increased oxygen levels and decreased blood acidity

6. What is vital capacity?

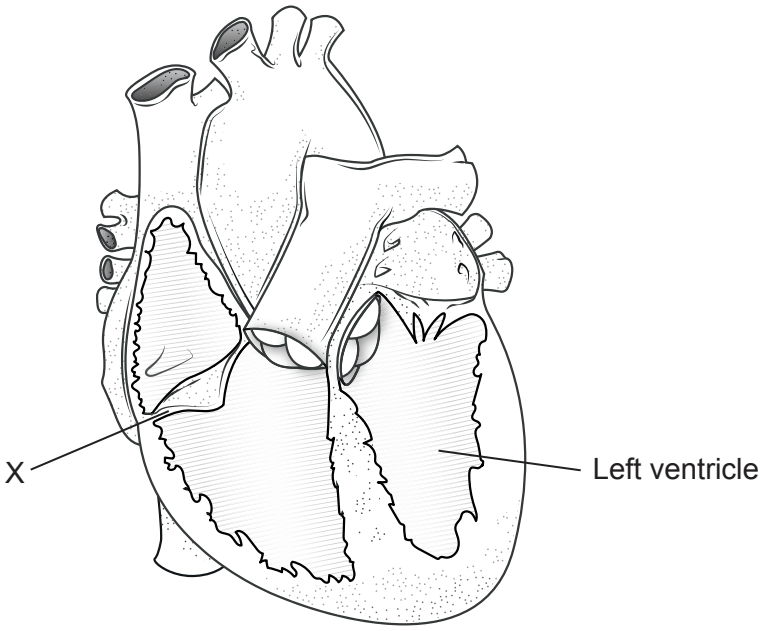
A. Total lung capacity + tidal volume

B. Tidal volume + inspiratory reserve volume + expiratory reserve volume

C. Tidal volume + inspiratory reserve volume + residual volume

D. Total lung capacity – inspiratory reserve volume

7. What is the structure labelled X in the diagram below?



[Source: © International Baccalaureate Organization 2017]

A. Bicuspid valve

B. Tricuspid valve

C. Aortic valve

D. Pulmonary valve

8. Where in the heart is the electrical impulse generated for contraction?

A. Atrioventicular node

B. Left atrium

C. Sinoatrial node

D. Right ventricle

9. What are some of the principal structures of the ventilatory system?

A. Nose, mouth, pharynx, larynx, aorta

B. Bronchi, bronchioles, lungs, alveoli, trachea

C. Bronchioles, lungs, alveoli, trachea, pulmonary artery

D. Bronchioles, lungs, alveoli, pulmonary vein, bronchi

10. Which describes pulmonary and systemic circulation?

A. Pulmonary circulation delivers oxygenated blood to the lungs, systemic circulation delivers deoxygenated blood to the body.

B. Pulmonary circulation delivers deoxygenated blood to the body, systemic circulation delivers oxygenated blood to the lungs.

C. Pulmonary circulation delivers oxygenated blood to the body, systemic circulation delivers deoxygenated blood to the body.

D. Pulmonary circulation delivers deoxygenated blood to the lungs, systemic circulation delivers oxygenated blood to the body.

11. Which energy system is the quickest to re-synthesize ATP?

A. Anaerobic glycolysis

B. Aerobic glycolysis

C. Lactic acid

D. Creatine phosphate

12. Which of the following are major storage sites for triglycerides?

I. Skeletal muscle

II. Smooth muscle

III. Adipose tissue

A. I and II only

B. I and III only

C. II and III only

D. I, II and III

13. What is the process by which glycogen is broken down to glucose?

A. Glycogenolysis

B. Glycolysis

C. Gluconeogenesis

D. Lipolysis

14. Which type of process is taking place when ATP is converted to ADP and phosphate?

I. Metabolism

II. Anabolism

III. Catabolism

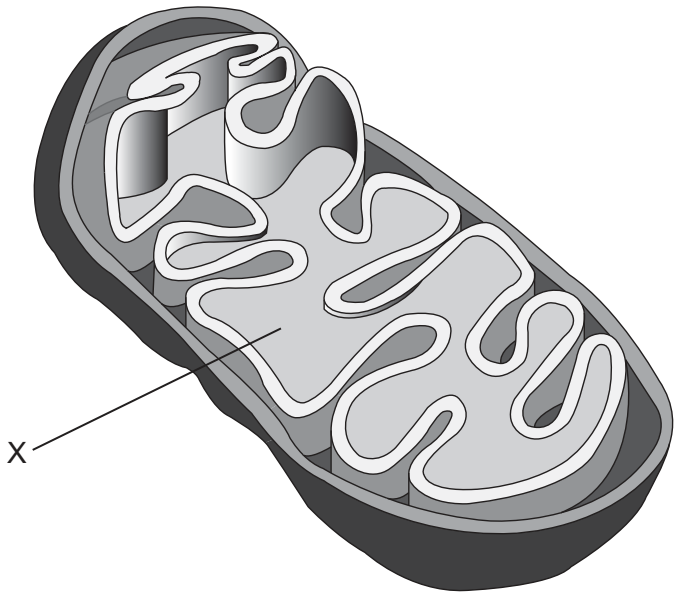
A. I only

B. I and II only

C. III only

D. I and III only

15. What is the part labelled X in the diagram of a mitochondrion below?



[Source: © International Baccalaureate Organization 2017]

A. Golgi apparatus

B. Outer smooth membrane

C. Cristae

D. Inner matrix

16. Which is an example of the application of Newton's second law of motion?

A. A sprinter accelerating down the track

B. A cyclist travelling at a constant velocity

C. A basketball player pushing against the ground to jump upwards

D. A diver standing motionless before a dive on a springboard

17. Which describes the centre of mass of an object?

A. The distance from the point of balance of the object

B. The point about which all particles of the object are evenly distributed

C. The point about which the object's mass is evenly distributed

D. The point at which when a force is applied only rotational motion will result

18. Why is the knee bent during the recovery phase of running?

A. To move the centre of gravity higher

B. To increase the length of the lever

C. To decrease the moment of inertia

D. To decrease angular velocity

19. What is the displacement of an 800 metre runner who runs two laps of a 400 metre running track and finishes at the same point as he started?

A. 0 metres

B. 200 metres

C. 400 metres

D. 800 metres

20. Which of the following describes a third class lever?

I. Effort force acts between the fulcrum and the load force.

II. Load force acts between the fulcrum and the effort force.

III. Fulcrum is between the load force and the effort force.

A. I only

B. II only

C. III only

D. I, II and III

21. Which type of skill is knowledge of the rules of a sport?

A. Cognitive

B. Perceptual

C. Motor

D. Perceptual motor

22. Which attribute is measured by the action used to perform sit and reach test?

A. Skill

B. Technique

C. Movement time

D. Ability

23. The respiratory centre detects changes in pH levels. Which type of sensory input is this?

A. Exteroceptor

B. Executive programme

C. Proprioceptor

D. Interoceptor

24. Which shows bilateral transfer?

A. Improving dynamic strength in order to start races better

B. Progressing from throwing a ball to throwing a javelin

C. A football player learning to kick with her weaker foot

D. Changing from three players per team in basketball to five players

25. What is transfer of learning?

A. The rate at which a person learns

B. The initial stage of learning a skill

C. Processing one stimuli before learning the next

D. The effect that practice of one skill has on the learning of another

26. The table shows the distances in metres recorded by Sami in the shot put for six weeks. What type of learning curve is Sami demonstrating?

	Week 1	**Week 2**	**Week 3**	**Week 4**	**Week 5**	**Week 6**
Sami	20.10	20.20	20.30	20.40	20.50	20.60

A. Linear

B. Negative acceleration

C. Plateau

D. Positive acceleration

27. Which is a reliable and valid test of a basketball player's leg power?

A. Illinois Agility Test

B. Ruler drop test

C. Stork stand

D. Vertical jump

28. What is a Physical Activity Readiness Questionnaire (PAR-Q) form used for?

A. To determine the goals of the programme

B. To ensure that it is safe for the person to undertake physical activity

C. To determine the person's favourite activities

D. To establish a baseline so any improvements can be measured

29. Which of these is a measure of perceived exertion, designed specifically to be used with adults?

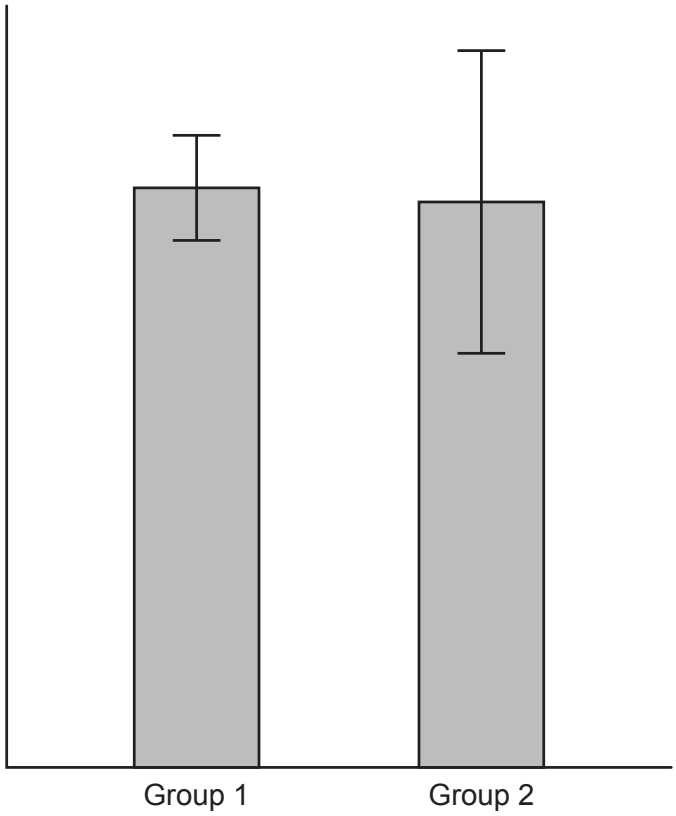
A. Borg scale

B. OMNI scale

C. CERT scale

D. Heart rate

30. What do the error bars in the graph say about data?



[Source: © International Baccalaureate Organization 2017]

A. The data for Group 1 has a lower mean value.

B. The data for Group 2 has a higher degree of variability.

C. The data for Group 1 has a higher degree of accuracy.

D. The data for Group 1 and 2 has the same degree of coefficient of variation.