



PiXL Independence:

PE – Answer Booklet

KS4

Applied Anatomy and Physiology

Contents:

Answers

I. Quizzes

Multiple Choice Quiz

- Which one of the following statements is false?
 - The scapula, cranium and tibia are bones in the body.
 - Rotation occurs at ball and socket joints.
 - Ligaments attach bone to muscle.**
 - The skeleton stores minerals in the body.
- What are the two bones in the lower arm?
 - Ulna and radius**
 - Ulna and humerus
 - Radius and humerus
 - Humerus and clavicle
- What type of movement is used at the elbow when a basketball player is releasing the ball to take a set shot?
 - Rotation
 - Extension**
 - Flexion
 - Abduction
- Which of the following statements is false?
 - The skeleton gives body shape and support.
 - The skeleton gives protection to vital organs.
 - The skeleton produces red and white blood cells
 - The skeleton is made up of three different skeletons- axial, appendicular and articular.**
- Which of the following statements is true?
 - The quadriceps and triceps are a muscle pair.
 - The deltoid is situated in the shoulder.**
 - The hamstring is situated in the lower leg.
 - There are two types of muscle in the body.
- The agonist is:
 - The working muscle that produces the movement.**
 - A stabiliser for the origin of the prime mover.
 - Also known as the secondary mover.
 - An insertion point where a muscle attaches to a bone.
- What is the muscle in the upper back called?
 - Latissimus Dorsi
 - Pectorals
 - Trapezius**
 - Gluteals
- What muscle causes the knee to bend whilst a hockey player is dribbling with a ball and running down the pitch?
 - Gastrocnemius
 - Quadriceps
 - Hamstring**
 - Gluteals

9. What order does a first class level follow?
- Fulcrum Load Effort
 - Load Fulcrum Effort**
 - Load Effort Fulcrum
 - Load Fulcrum Load
10. When bowling in cricket the movement at the shoulder travels through which plane of movement?
- Frontal
 - Sagittal
 - Transverse**
 - Multi- planar
11. When performing a cartwheel in gymnastics which axes of rotation is being used?
- Frontal**
 - Longitudinal
 - Multi axes
 - Transverse
12. Which of the following statements is false?
- Second class levers have the load in the middle.
 - The sagittal plane splits the body into left and right sides.
 - The axes of rotation for a somersault is frontal.**
 - The effort is in the middle of a third class lever.
13. Blood vessels that carry blood away from the heart to the body are:
- Veins
 - Capillaries
 - Arteries**
 - Venules
14. Haemoglobin is found in:
- Red Blood Cells**
 - White Blood Cells
 - Plasma
 - Platelets
15. The pathway of air through the respiratory system is:
- Nasal passage Alveoli Pharynx Bronchi
 - Nasal passage Pharynx Alveoli Bronchi**
 - Nasal passage Pharynx Bronchi Alveoli
 - Nasal Passage Bronchi Alveoli Pharynx
16. What sport is most likely to be an anaerobic exercise?
- 100m race**
 - Hockey match
 - Handball match
 - 800m race

17. Which of the following statements is false?
- Lactic acid builds up in the muscles.
 - Heart rate increases during exercise.
 - Tidal volume decreases during exercise.**
 - Vascular shunt mechanism takes effect during exercise.
18. Cardiac hypertrophy is:
- The heart becoming weaker
 - The heart becoming stronger
 - The arteries becoming weaker
 - The arteries becoming stronger**
19. Exercising makes bones to become stronger. A lack of exercise could result in?
- Arthritis
 - Osteoporosis**
 - Kyphosis
 - Asctoporosis
20. Which of the following statements is false?
- Muscles get bigger the more you exercise
 - Exercise increases tendon strength
 - Breathing rate increases during exercises
 - The more you exercise the higher your resting heart rate**

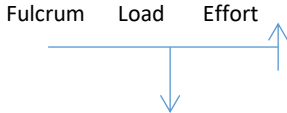
Fill in the Gap Quiz

- One function of the body is to produce **red blood cells**.
- The joint type at the knee is a **hinge** joint.
- The **radius** and the **ulna** are two bones situated in the lower arm.
- The role of **cartilage** is to reduce friction and act as a shock absorber.
- The muscles situated in the upper leg are **hamstring** and **quadriceps**.
- The **origin** is the end of the muscle attached to a bone that is stable.
- The **pectoral** causes adduction and flexion at the shoulder joint.
- When two muscles work together to create movement- it is called an **antagonistic pair**.
- When the fulcrum sits in the middle of the lever system is called a **1st class lever**.
- When completing a sprint race the leg action in running works in the **transverse** plane.
- The **longitudinal** axis runs vertically through the midpoint of the body.
- Mechanical advantage** is when you can move a large output with a smaller effort.

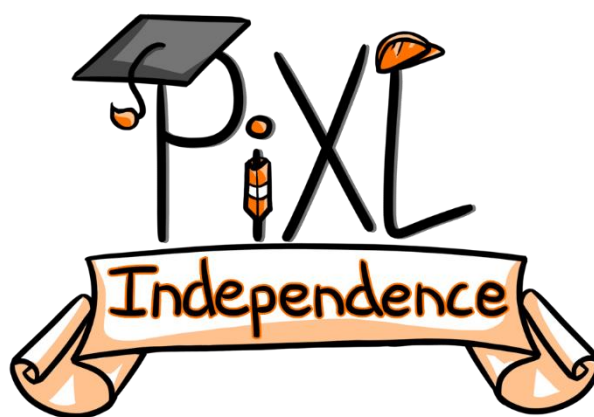
13. **Arteries** carry blood away from the heart to the rest of the body.
14. The **bicuspid** valve is between the left atria and left ventricle.
15. Gas exchange takes place in the **alveoli** where oxygen moves into the body and carbon dioxide is removed.
16. During anaerobic exercise **lactic acid** is produced.
17. **Vascular shunt mechanism** takes place when the body does not have enough oxygen and therefore oxygen is delivered to working muscles instead of non-essential organs.
18. When muscles become bigger and stronger this is known as **hypertrophy**.
19. When you exercise for a long period of time one long term effect of exercise is that resting heart rate **decreases**.
20. When we exercise our breathing rate increases. Alongside this **tidal volume** also increases. This is the volume of air either inspired or expired per breath.

Open Ended Question Quiz

1. Ligaments join bone to bone and help to keep the structure of the skeleton.
2. Flexion is when the angle at the joint gets smaller compared to extension when the joint angle becomes greater.
Relevant sporting example included
3. Shoulder and hip. Include two relevant sporting examples.
4. Protection of vital organs, structure and support, shape, production of blood cells, storage of minerals, movement
5. For example, when kicking a football when performing a free kick the quadriceps contract and the hamstring relaxed to allow the knee to extend to kick the football. Accept relevant sporting examples.
6. Trapezius causes extension at the neck
7. Support the movement of the prime mover, works in opposition to the agonist
8. Tricep causes extension at the elbow
9. Second class lever


10. Longitudinal axis runs through the belly button of the body and allows rotation sideways. E.g. cartwheel
11. Sagittal plane separates the body into left and right sides. This allows flexion and extension to occur. Include relevant sporting example
12. Mechanical advantage is when you can move a large output with a smaller effort.
13. Capillaries are 1 cell thick and allow the diffusion of oxygen into the blood stream and diffusion of oxygen out of the blood stream.

14. Aerobic exercise is when the body can exercise using oxygen to replenish muscle stores. Include relevant sporting example.
15. Stroke volume is the amount of blood the heart can pump out of the ventricles in one beat of the heart
16. White blood cells fight disease and increase immune system abilities.
17. Long term effects of respiratory are increase capillary density, increase vital capacity, greater intercostal muscles and diffusion is more efficient.
18. Hypertrophy is when the muscles become bigger and stronger.
19. Vascular shunt is when more blood is distributed to the working muscles and less to the non-essential organs.
20. Muscles become more pliable, increase muscle temperature, and metabolism. Increase production of lactic acid.



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