

**TEACHERS COLLEGES OF JAMAICA
BACHELOR OF EDUCATION
DECEMBER 2018 – EXAMINATIONS
COMMON PAPER
PHYSICAL EDUCATION
ANATOMY AND PHYSIOLOGY
[PE 103SEB]**

YEAR 2

SECONDARY

TIME: 2 ½ HOURS

INSTRUCTIONS: Candidates are required to answer ALL questions in Sections A and B and any TWO questions from Section C.

DO NOT TURN THIS PAGE UNTIL YOU ARE TOLD TO DO SO.

SECTION A - (30 marks)

Answer ALL questions in this section by circling the letter that represents the correct answer in the section below.

1. Anatomy is defined as a science that deals with the study of
 - a. cells.
 - b. function of body parts.
 - c. structural relationship of body parts.
 - d. study of tissues.

2. Physiology is the study of
 - a. planes of the body.
 - b. the structure of bones.
 - c. function of the various body parts.
 - d. structure of organs.

3. The cut or line that divides the body into left and right halves is known as the
 - a. frontal plane.
 - b. longitudinal plane.
 - c. transverse plane.
 - d. midsagittal plane.

4. The transverse axis divides the body into
 - a. ventral and dorsal.
 - b. anterior and posterior.
 - c. superior and inferior.
 - d. right and left side.

5. The granular structures that are sometimes attached to the endoplasmic reticulum and are responsible for protein synthesis are known as
 - a. mitochondria.
 - b. ribosomes.
 - c. lysosomes.
 - d. nucleus.

6. Which best describes the structure of the mitochondrion of a cell? It is a/an
 - a. fluid filled sac containing digestive enzymes.
 - b. flattened membranous sac.
 - c. outer membrane and an inner folded membrane.
 - d. vesicle containing oxidative enzymes.

7. Which organelle within a cell contains genetic material?
 - a. Golgi body
 - b. Cytoplasm
 - c. Peroxisomes
 - d. Nucleus

8. Which of the following tissues facilitates absorption, secretion and filtration of substances?
 - a. Epithelial tissue
 - b. Nervous tissue
 - c. Muscle tissue
 - d. Connective tissue

9. The following characteristics: most abundant tissue in the body, supports or binds other tissues and stores nutritional substances denote
 - a. muscle tissue.
 - b. nervous tissue.
 - c. connective tissue.
 - d. epithelial tissue.

10. Homeostasis is significant to all living organisms since it is concerned with
 - a. the amount of water loss from the body.
 - b. the type of muscle fibre in the body.
 - c. maintenance of constant internal environment.
 - d. the relaxation of the muscles.

11. When the body responds to a hot environment the blood vessels in the skin will widen to increase blood flow. This condition is known as
 - a. shivering.
 - b. metabolic process.
 - c. vasoconstriction.
 - d. vasodilation.

12. The sum of all chemical reactions in the body is termed
 - a. homeostasis.
 - b. physiology.
 - c. dynamic feedback.
 - d. metabolism.

13. pH refers to the percentage of hydrogen ions present in the body. The range that reflects a steady state of pH is
 - a. 7.35 to 7.45
 - b. 7.45 to 7.55
 - c. 7.55 to 7.65
 - d. 7.65 to 7.75.

14. Most joints in the human skeletal system facilitate movements. Which of the following does NOT permit any movement?
- Diarthrosis
 - Synarthrosis
 - Amphiarthrosis.
 - Polyaxial.
15. The skeleton is divided into two main regions, axial and appendicular. Which of the following is the axial region comprised of?
- Arms, legs and shoulder girdle.
 - Shoulder girdle, pelvic girdle and wrist.
 - Skull, vertebral column and rib cage.
 - Rib cage, shoulder girdle and vertebral column.
16. The vertebral column consists of twenty-six individual bones. How many of these are found in the cervical region?
- 5
 - 7
 - 9
 - 12
17. Muscular movements in the body enhance heat and energy production. Which of the following muscles is NOT under the control of the will (involuntary)?
- Biceps femoris
 - Triceps brachii
 - Cardiac sphincter
 - Latissimus dorsi
18. Which of the following is the simplest representation of the muscle?
- Sarcomere
 - Fibre
 - Bundle
 - Ribosome
19. In the flexion of the knee joint, which group of muscles plays a major role?
- Biceps
 - Triceps
 - Quadriceps
 - Hamstring
20. Which muscle fibre type would enhance the performance of a sprinter?
- Slow twitch fibre
 - Fast twitch fibre
 - Intermediate fibre
 - All fibre types.

21. Which of the following is an excretory organ?
- Heart
 - Skin.
 - Stomach.
 - Pancreas
22. The central nervous system in the human body consists of
- spinal cord and peripheral nerves.
 - brain and peripheral nerves.
 - brain and spinal cord.
 - spinal cord and ganglion.
23. After an athlete has eaten a meal, which body system is responsible for the nutrients reaching the muscles?
- Digestive system
 - Respiratory system.
 - Endocrine system.
 - Cardiovascular system.
24. In performing physical activities, testosterone is an important hormone. Which system of the body is responsible for its secretion?
- Integumentary system
 - Urinary system
 - Endocrine system
 - Circulatory system.
25. Which organ of the digestive system has muscles running in three different directions and has a “J” shape?
- Large intestine.
 - Small intestine.
 - Oesophagus
 - Stomach.
26. In training, a 5000 m athlete engages in many runs of long duration. Which body system will be greatly impacted by this type of training?
- Nervous system
 - Hormonal system.
 - Respiratory system
 - Excretory system.
27. Food is prevented from flowing back into the mouth from the stomach by the
- bicuspid valve.
 - pyloric valve.
 - cardiac valve.
 - tricuspid valve.

28. Carbon dioxide is removed from the blood via the
- nose.
 - mouth.
 - skin.
 - alveoli.
29. Which set of bones is not a part of the appendicular skeleton?
- Scapula and Clavicle
 - Sacrum and Sternum
 - Scapula and Lunate
 - Humerus and Scapula
30. The following are ALL major components of the cardiovascular system EXCEPT
- Blood.
 - Veins.
 - Heart.
 - Ileum.

SECTION B - (30 marks)

Answer ALL questions in this section.

1. List THREE types of Synovial joints in the human body and give an example of where each can be found. (6 marks)

Types	Examples
_____	_____
_____	_____
_____	_____
_____	_____

2. Identify FOUR factors that affect the effectiveness of enzymes. (4 marks)

3. Briefly describe the structure of EACH of the following tissues: (6 marks)

Blood

Cartilage

Bone

4. Within a composite cell there are various organelles. List FOUR of them and state the function of each. (6 marks)

Organelles

Functions

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<hr/>	<hr/>
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5. Outline how the body controls blood sugar levels: (8 marks)

6. State how Facilitated diffusion is performed. (2 marks)

SECTION C - (40 marks)

Answer any TWO questions from this section. Each is worth 20 marks.

1. Describe the respiratory system of the human body as it relates to the
 - a. major components of the system. (5 marks)
 - b. structure of each component mentioned. (5 marks)
 - c. primary function of each component. (4 marks)
 - d. relevance of the system for effective body functioning. (4 marks)

(Language and organization 2 marks)

2. Describe the cardiovascular system of the human body as it relates to the
 - a. structural components of the cardiovascular system (5 marks)
 - b. structure of each component, (5 marks)
 - c. difference between cardiac and systemic circulation (4 marks)
 - d. primary function of the system. (4 marks)

(Language and organization 2 marks)

3. Describe the skeletal system of the human body.
 - a. List the major components of the skeleton system. (5 marks)
 - b. Provide brief descriptions of each. (5 marks)
 - c. Give two examples for each and their specific locations. (4 marks)
 - d. Outline the primary functions of the system. (4 marks)

(Language and organization 2 marks)

4. Describe the muscular system of the human body.
 - a. Give major function of the system. (5 marks)
 - b. Describe the structure of the major components of the system. (5 marks)
 - c. Outline the major function of the different types of muscles found within the system. (4 marks)
 - d. Differentiate between the fibre types found within the system. (4 marks)

(Language and organization 2 marks)

END OF EXAMINATION