

**TEACHERS COLLEGES OF JAMAICA**

**BACHELOR OF EDUCATION**

**JANUARY 2021 EXAMINATIONS**

**COMMON PAPER**

**PHYSICAL EDUCATION**

**ANATOMY AND PHYSIOLOGY**

**[PE103SEB]**

**YEAR 1**

**TIME: 2 ½ HOURS**

**Instructions: Candidates are required to do ALL questions in SECTIONS A and B and TWO questions from SECTION C.**

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

**SECTION A – (30 marks)**

**Circle the letter beside the correct response**

1. An aggregation of cells specialized to carry out a function.
  - a) Organ
  - b) Cell
  - c) Tissue
  - d) Organelle
  
2. Which is a function of bone tissue?
  - a) Protection
  - b) Transport
  - c) Heat production
  - d) Heat Storage
  
3. The process by which energy is released from food in the body
  - a) Anabolism
  - b) Osmosis
  - c) Digestion
  - d) Respiration
  
4. The costal cartilage is made of \_\_\_\_\_ cartilage.
  - a) Hyaline
  - b) Fibrous
  - c) Grizzle
  - d) Elastic
  
5. Identify the excretory organ below
  - a) The heart
  - b) The tibia
  - c) The stomach
  - d) The skin
  
6. Identify the term which refers to a structure located towards the midline of the body.
  - a) Lateral
  - b) Medial
  - c) Dorsal
  - d) Superior
  
7. Which body system is responsible for the following: regulation of blood volume, and glucose synthesis?
  - a) Excretory
  - b) Digestive
  - c) Endocrine
  - d) Cardiovascular

8. The range for pH in the body is
- 7.50-7.55.
  - 7.45-7.55.
  - 7.35-7.50.
  - 7.35-7.45.
9. Which component of the digestive system conducts food from the mouth to the stomach?
- The colon
  - The duodenum
  - The esophagus
  - The ileum
10. The temporal, occipital and zygomatic bones can be found in the
- spinal column.
  - skull.
  - ribcage.
  - hand.
11. In the extension of the elbow joint the \_\_\_\_\_ plays a major role.
- triceps
  - biceps
  - deltoid
  - gracilis
12. A major difference between *compact bone* and *spongy bone* is the
- degree of porosity.
  - location.
  - size.
  - shape.
13. Which of the following is the simplest functional representation of muscle?
- Fasciculus
  - Fibre
  - Sarcomere
  - Ribosome
14. Which directional term would BEST describe the location of the eyes in relation to the chin?
- Lateral
  - Superior
  - Inferior
  - Dorsal

15. The gland responsible for the secretion of thyroxin is the
- adrenal.
  - testes.
  - thyroid.
  - pituitary.
16. The \_\_\_\_\_ has C shaped cartilage rings and conducts air.
- trachea
  - larynx
  - nose
  - pharynx
17. Which body system is responsible for the transportation of nutrients to the tissues of the body?
- Cardiovascular
  - Digestive
  - Respiratory
  - Endocrine
18. Intercalated discs are found in \_\_\_\_\_ muscle tissue.
- skeletal
  - smooth
  - adductor
  - cardiac
19. Which set of bones are NOT a part of the appendicular skeleton?
- Ethmoid and sternum
  - Scapula and clavicle
  - Hamate and lunate
  - Scapula and humerus
20. Which of the following is always a part of urine?
- Ketones
  - Protein
  - Water
  - Glucose
21. The calcaneus is found in the
- elbow.
  - knee.
  - foot.
  - hip.

22. Calcitonin is responsible for the regulation of
- glucose.
  - calcium.
  - sodium.
  - iron.
23. Hypothermia is the decrease of body temperature below
- 45°C.
  - 35°C.
  - 30°C.
  - 58°C.
24. The pleura houses the
- heart.
  - stomach.
  - kidney.
  - lungs.
25. The master gland of the body is the
- thyroid.
  - pituitary.
  - adrenal.
  - thymus.
26. What allows us to detect a change in the environmental temperature?
- Thermoreceptors
  - Chemoreceptors
  - Baroreceptors
  - Photoreceptors
27. The gradual loss of bone density is known as
- Arteriosclerosis.
  - Osteoporosis.
  - Osteoarthritis.
  - Arthritis.
28. The hyoid bone is found in the
- pelvis.
  - forearm.
  - spinal column.
  - neck.

29. Which is NOT a component of plasma?

- a) Nitrogenous waste
- b) Nutrients
- c) Hormones
- d) Undigested food

30. Steady state is BEST described as the

- a) maintenance of a constant internal environment.
- b) range at which the internal variables influence normal body function.
- c) optimal values of internal variables.
- d) incremental movement away from the set point.

### SECTION B (30 marks)

**Answer ALL questions in this section**

Question 1.

- a) Describe the structure of the bone tissue of an athlete as compared to a non-athlete. Remember to mention the density, weight, strength and the appearance of the surface of such the bones (8 marks)
- b) Give FOUR types of bones based on shape. (2 marks)

Total 10 marks

Question 2

- a) List FOUR organelles of the composite/animal cell. (2 marks)
- b) Evaluate why the cell membrane of the composite/animal cells is necessary for the survival of the cell. Utilize at least four functions of the cell membrane in your answer. (8 marks)

Total 10 marks

Question 3

- a) List TWO primary tissue types in the body (2 marks)
- b) The bladder is known to contain a specific type of tissue that is accommodating to its functions.
  - i. Say what this tissue is and describe its appearance. Remember to mention the arrangement of the nucleus and why they are arranged this way. (4 marks)
  - ii. Explain why it is important for this tissue to be located in the bladder. Be mindful to mention at least TWO functions of the bladder and what happens when we refuse to urinate over a period. (4 marks)

Total 10 marks

**SECTION C (40 marks)**

**Answer TWO questions from this section**

1. Describe the Skeletal System in terms of
  - a) FIVE components of this system.
  - b) FIVE structures of the components.
  - c) FIVE functions of the components mentioned above.
  - d) FIVE function(s) of the system.

(20 marks)

2. Describe the Respiratory system in terms of
  - a) FIVE components that make up this system.
  - b) FIVE structures of the components.
  - c) FIVE functions of the components mentioned above.
  - d) FIVE function(s) of the entire system.

(20 marks)

3. Describe the Integumentary system in terms of the
  - a) FIVE of its components and their location.
  - b) FIVE structure of the tissues of the above components.
  - c) FIVE functions of the components mentioned above.
  - d) FIVE function(s) of the general respiratory system.

(20 marks)

4. Describe the Cardiovascular system in terms of
  - a) Any FIVE of its components as discussed in class.
  - b) The structure of FIVE components mentioned above.
  - c) FIVE functions of these components describe above.
  - d) Any FIVE functions of the system.

(20 marks)

**END OF EXAMINATION**

