UNIVERSIDAD DE LAS FUERZAS ARMADAS ESPE

ENGLISH LANGUAGE MEDICINE

THIRD TERM EVALUATION

READING

Read the following article carefully and choose the correct answers a, b or c for the given questions.

THE SKELETAL SYSTEM

The skeletal system is a complex physiological framework composed of 206 bones in adults, along with cartilage, ligaments, and connective tissues. Beyond its structural role, the skeleton performs vital functions including protection of internal organs, support and locomotion, and hematopoiesis—the production of blood cells within bone marrow.

Bones are classified by shape: long bones (femur, humerus), short bones (carpals, tarsals), flat bones (sternum, ribs), and irregular bones (vertebrae). Structurally, bones consist of dense cortical bone on the exterior and trabecular bone within, providing both strength and flexibility. The mineralized matrix comprises hydroxyapatite, while the organic component contains collagen fibers that provide elasticity.

Bone homeostasis depends on continuous remodeling through osteoclast-mediated resorption and osteoblast-mediated formation. Calcium and phosphate regulation involves parathyroid hormone, calcitriol, and calcitonin. Osteocytes, embedded within lacunae, respond to mechanical stress through the piezoelectric effect, influencing bone density accordingly.

Synovial joints, the most mobile articulations, contain synovial fluid that reduces friction. The articular cartilage's hyaline composition and the surrounding ligaments stabilize movement patterns. The shoulder joint exemplifies multiaxial movement, while the hinge joint of the elbow permits only uniaxial flexion-extension.

Understanding skeletal pathophysiology is essential for diagnosing osteoporosis, rheumatoid arthritis, and traumatic injuries. Bone density measurement through DXA (dual-energy X-ray absorptiometry) provides crucial diagnostic information for metabolic bone disease. Age-related changes, hormonal influences, and nutritional factors profoundly affect skeletal integrity.

1. Which hormone is primarily responsible for increasing serum calcium levels through osteoclast activation?

A) Calcitonin
B) Parathyroid hormone
C) Thyroxine
D) Estrogen

2. The piezoelectric effect in bone is mediated primarily by which cell type?

A) Osteoblasts
B) Osteoclasts
C) Osteocytes
D) Bone lining cells

3. Which of the following bone types would be classified as an irregular bone?

A) Tibia
B) Scapula
C) Vertebra
D) Radius

4. The organic matrix component of bone that provides tensile strength is primarily composed of:

A) Hydroxyapatite
B) Collagen type I
C) Proteoglycans
D) Osteocalcin

5. In a synovial joint, which structure reduces friction between articulating bones?

A) Fibrocartilage
B) Hyaline cartilage
C) Synovial fluid
D) Elastic cartilage

6. Which imaging technique quantifies bone mineral density to diagnose osteoporosis?

A) Computed tomography
B) Dual-energy X-ray absorptiometry
C) Magnetic resonance imaging
D) Positron emission tomography

7. The resorption phase of bone remodeling is primarily mediated by:

A) Osteoblasts
B) Osteocytes
C) Osteoclasts
D) Bone-lining cells

8. Which mineral is the primary inorganic component of the bone matrix?

A) Calcium carbonate
B) Calcium phosphate (hydroxyapatite)
C) Magnesium oxide
D) Sodium chloride

9. The shoulder joint is classified as a _____ joint because it permits movement in multiple planes.

A) Hinge
B) Pivot
C) Multiaxial (ball-and-socket)
D) Saddle

10. Which of the following hormones inhibits bone resorption and promotes osteoblast activity?

A) Parathyroid hormone
B) Estrogen
C) Glucocorticoids
D) Thyroid hormone

USE OF ENGLISH

VOCABULARY: Choose the correct answer a, b or c.

11.The thick muscular chamber of the heart that pumps oxygenated blood to the body is called the:
A) Right atrium
B) Left ventricle
C) Right ventricle
D) Left atrium

12. The vessels that return deoxygenated blood from the body to the right atrium are called:
A) Arteries
B) Capillaries
C) Veins
D) Arterioles

13. Which term describes the contraction phase of the cardiac cycle?
A) Diastole
B) Systole
C) Arrhythmia
D) Ischemia

14. The smallest blood vessels where gas exchange occurs between blood and tissues are:
A) Arteries
B) Capillaries
C) Venules
D) Arterioles

15. The term "____" refers to the amount of blood pumped by the heart per minute:
A) Stroke volume
B) Cardiac output
C) Blood pressure
D) Pulse rate

16. The large artery that carries oxygenated blood from the left ventricle to the body is called the:
A) Pulmonary artery
B) Coronary artery
C) Aorta
D) Carotid artery

17. Which term describes irregular heartbeats or abnormal electrical activity in the heart?
A) Infarction
B) Arrhythmia
C) Stenosis
D) Aneurysm

18. The valve located between the left atrium and left ventricle is called the:
A) Tricuspid valve
B) Mitral valve (or bicuspid valve)
C) Pulmonary valve
D) Aortic valve

19. The term "____" refers to a blood clot that forms inside a blood vessel:
A) Embolus
B) Thrombus
C) Hemorrhage
D) Stenosis

20. The blood vessels that carry blood away from the heart at high pressure are called:
A) Veins
B) Capillaries
C) Arteries
D) Venules

GRAMMAR : Choose the correct answer to fill in the blanks

The Integumentary System

Scientists 21 _____ the integumentary system, and researchers 22_____it as the body's largest organ. The epidermis 23_____ to be the outermost layer that 24_____ protection, and melanocytes 25_____ melanin for UV protection. Scientists 26_____that the dermis contains collagen fibers, blood vessels, and nerve endings that 27_____ sensation and temperature regulation. Medical research 28_____ that the hypodermis 29 (//) as insulation and energy storage through adipose tissue accumulation. Hair follicles 30_____ in the dermis

21	A. have studied	B. has studied	C. study
22	A. have identified	B. has identified	C. identify
23	A. have proven	B. has proven	C. proved
24	A. have provided	B. has provided	C. provide
25	A. have produced	B. has produced	C. produce
26	A. have discovered	B. has discovered	C. discover
27	A. have enabled	B. has enabled	C. enable
28	A. have demonstrated	B. has demonstrated	C. demonstrate
29	A. have served	B. has served	C. serve
30	A. have originated	B. has originated	C. originate

LISTENING

Listen to the track about *Health problems* and match the correct answer

31. Abdominal pain _____	**A. Marco**
32. Fever and chills_____	**B. Lisa**
33. Nasal congestion_____	**C. Emma**
34. Nausea and vomiting_____	**D. Sarah**
35. Leg pain and immobility_____	**E. David**

WRITING

Write a paragraph about your experience in the first semester of medicine, use simple past tense, present perfect tense, write from 60 to 80 words.