



“Investing in Africa’s future”

COLLEGE OF HEALTH, AGRICULTURE AND NATURAL SCIENCES

NSNS 304 : ANATOMY AND PHYSIOLOGY

END OF SECOND SEMESTER FINAL EXAMINATIONS

JUNE 2019

LECTURER: Mrs Chituku S

DURATION: 3 HRS

INSTRUCTIONS

Answer **ALL** questions Section A

Answer any **three** questions Section B

All questions carry equal marks (20).

DO NOT repeat material.

Section A: Answer all questions in this section

1) Which of the following terms describes the body's ability to maintain its normal state?

- (A) Anabolism
- (B) Catabolism
- (C) Tolerance
- (D) Homeostasis
- (E) Metabolism

2) Which cells in the blood do not have a nucleus?

- (A) Lymphocyte
- (B) Monocyte
- (C) Erythrocyte
- (D) Basophil
- (E) Neutrophil

3) Which of the following allows air to pass into the lungs?

- (A) Aorta
- (B) Oesophagus
- (C) Heart
- (D) Pancreas
- (E) Trachea

4) Which of the following closes and seals off the lower airway during swallowing?

- (A) Alveoli
- (B) Epiglottis
- (C) Larynx
- (D) Uvula
- (E) Vocal cords

5) Which of the following anatomical regions of abdomen lies just distal to the sternum?

- (A) Epigastric
- (B) Hypochondriac
- (C) Hypogastric
- (D) Lumbar
- (E) Umbilical

6) In which of the following positions does a patient lie face down?

- (A) Dorsal
- (B) Erect
- (C) Lateral
- (D) Prone
- (E) Supine

7) Which of the following is a structural, fibrous protein found in the dermis?

- (A) Collagen
- (B) Heparin
- (C) Lipocyte
- (D) Melanin
- (E) Sebum

8) Which of the following is the large bone found superior to the patella and inferior to the ischium?

- (A) Calcaneus
- (B) Femur
- (C) Symphysis pubis

- (D) Tibia
- (E) Ulna

9) Which of the following is the point at which an impulse is transmitted from one neuron to another neuron?

- (A) Dendrite
- (B) Glial cell
- (C) Nerve center
- (D) Synapse
- (E) Terminal plate

10) Which of the following cranial nerves is related to the sense of smell?

- (A) Abducens
- (B) Hypoglossal
- (C) Olfactory
- (D) Trochlear
- (E) Vagus

11) Where is the sinoatrial node located?

- (A) Between the left atrium and the left ventricle
- (B) Between the right atrium and the right ventricle
- (C) In the interventricular septum
- (D) In the upper wall of the left ventricle
- (E) In the upper wall of the right atrium

12) Oxygenated blood is carried to the heart by which of the following structures?

- (A) Aorta
- (B) Carotid arteries
- (C) Inferior vena cava
- (D) Pulmonary veins
- (E) Superior vena cava

13) Which of the following substances is found in greater quantity in exhaled air?

- (A) Carbon dioxide
- (B) Carbon monoxide
- (C) Nitrogen
- (D) Oxygen
- (E) Ozone

14) Which of the following allows gas exchange in the lungs?

- (A) Alveoli
- (B) Bronchi
- (C) Bronchioles
- (D) Capillaries
- (E) Pleurae

15) Which of the following organs removes bilirubin from the blood, manufactures plasma proteins, and is involved with the production of prothrombin and fibrinogen?

- (A) Gallbladder
- (B) Kidney
- (C) Liver
- (D) Spleen
- (E) Stomach

16) Which of the following best describes the process whereby the stomach muscles contract to propel food through the digestive tract?

- (A) Absorption
- (B) Emulsion
- (C) Peristalsis
- (D) Regurgitation
- (E) Secretion

17) Which of the following describes the cluster of blood capillaries found in each nephron in the kidney?

- (A) Afferent arteriole
- (B) Glomerulus
- (C) Loop of Henle
- (D) Renal pelvis
- (E) Renal tubule

18) In men, which of the following structures is located at the neck of the bladder and surrounds the urethra?

- (A) Epididymis
- (B) Prostate
- (C) Scrotum
- (D) Seminal vesicle
- (E) Vas deferens

19) Which of the following are mucus-producing glands located on each side of the vaginal opening?

- (A) Adrenal
- (B) Bartholin's
- (C) Bulbourethral
- (D) Corpus luteum
- (E) Parotid

20) Calcium, potassium, and sodium are classified as which of the following?

- (A) Androgens
- (B) Catecholamines
- (C) Electrolytes
- (D) Estrogens
- (E) Prostaglandins

21) Which one is odd about the central nervous system.....

- (A) Made up of brain and spinal cord
- (B) Acts as body's control center, coordinates body's activities

- (C) Impulses travel through the neurons in your body to reach the brain
- (D) All of the above
- (E) None of the above

22). Which statement is odd concerning Somatic Nervous System

- (A) Relay information between skin, skeletal muscles and central nervous system
- (B) You consciously control this pathway by deciding whether or not to move muscles (except reflexes)
- (C) Reflexes: Automatic response to stimulus
- (D) They are body building blocks
- (E) Can be divided into small units

23) Which one of the statements below describes the Autonomic Nervous System

- (A) Relay information from central nervous system to organs
- (B) Involuntary: You do not consciously control these
- (C) A and B
- (D) All of the above
- (E) None of the above

24) Which statement is true concerning the Sympathetic Nervous System

- (A) controls in times of stress, such as the flight or fight response
- (B) It is the brain part of the Nervous system
- (C) It is absent in children
- (D) It disappears with age
- (E) It is described as the proximal convoluted tubules of the nephron

25) Concerning the Parasympathetic Nervous System which statement is true

- (A) controls body in times of rest
- (B) was discovered in the endocrine system
- (C) it is part of the skeletal system
- (D) it is visible to the naked eye
- (E) can also referred to digestive system

26) Which statement is not true concerning the brain stem

- (A) Made up of the medulla oblongata, pons and midbrain.
- (B) Medulla oblongata controls involuntary activities such as heart rate and breathing
- (C) Pons and midbrain act as pathways connecting various part of the brain with each other.
- (D) Sometimes called the reptilian brain, because it resembles the entire brain of a reptile.
- (E) It is part of the urinary system

27) The following are the organs of the Respiratory system except the

- (A) Nose
- (B) Pharynx

- (C) Trachea
- (D) Bronchi
- (E) colon

28) male reproductive system organs include the following except:

- (A) Penis
- (B) Scrotum
- (C) Uterus
- (D) Prostate
- (E) Testis

29 The following statements describe the testes

- (A) Paired oval glands measuring 2 in. By 1 in.
- (B) Surrounded by dense white capsule
- (C) Septa form 200 - 300 compartments called lobules
- (D) Each is filled with 2 or 3 seminiferous tubules where sperm are formed
- (E) exchange of gases as we breathe

30 Which of the statements describe spermatogenesis

- (A) Each of four spermatids develop into a sperm
- (B) Second meiosis division give four spermatids, each with 23 single stranded chromosomes
- (C) First meiosis division give two secondary spermatocytes, each with 23 chromosomes that become double stranded.
- (D) None of the above
- (E) All of the above

31 Best description of erection in man is when there is

- (A) Sexual stimulation
- (B) Parasympathetic nervous system reflex
- (C) Dilation of the arterioles supplying the penis
- (D) All of the above
- (E) None of the above

32 Following are the components of the gastrointestinal tract except

- (A) mouth
- (B) stomach
- (C) pyloric sphincter
- (D) duodenum
- (E) sternum

33 Salivary glands release

- (A) Serous and mucous fluid
- (B) Amylase – breaks down carbohydrates
- (C) Lipase – lipid digestion

- (D) All of the above
- (E) None of the above

34 The functions of the pinna are as follows except

- (A) Surrounds entrance to **external acoustic meatus**
- (B) Protects opening of canal
- (C) Provides directional sensitivity
- (D) All of the above
- (E) None of the above

35 Tympanic membrane is best described as

- (A) a thin, semitransparent sheet
- (B) That separates external ear from middle ear
- (C) A and B
- (D) None of the above

- (E) All of the above

36 Which statement is not true concerning the ear canal

- (A) Is an external passage way
- (B) Ends at tympanic membrane (eardrum)
- (C) Lined with many small, outwardly projecting hairs
- (D) Hairs trap debris and provide increased tactile sensitivity through their root hair plexus
- (E) It is the outer fleshy cartilage

37 Which of the following best describes the location where the carotid pulse can be found?

- (A) In front of the ears and just above eye level
- (B) In the antecubital space
- (C) In the middle of the groin
- (D) On the anterior side of the neck
- (E) On the medial aspect of the wrist

38) Blood flows from the right ventricle of the heart into which of the following structures?

- (A) Inferior vena cava
- (B) Left ventricle
- (C) Pulmonary arteries
- (D) Pulmonary veins
- (E) Right atrium

39) The thoracic cage is a structural unit important for which of the following functions?

- (A) Alimentation
- (B) Menstruation

- (C) Micturition
- (D) Respiration
- (E) Urination

40) At which of the following locations does bile enter the digestive tract?

- (A) Gastroesophageal sphincter
- (B) Duodenum
- (C) Ileocecum
- (D) Jejunum
- (E) Pyloric sphincter

Section B: Answer any three questions from this section

Question 1

With the aid of labelled diagrams describe the function of the nephron. (20)

Question 2

Outline the function of the main hormones that control bone growth and remodelling (20)

Question 3

- a) With the aid of a diagram describe the neurone. (9)
- b) Give a detailed description of how electrical and chemical synapses function. (8)
- c) Outline three important functions of neurones (3)

Question 4.

- a. Describe the erythrocyte characteristics that contribute to their respiratory function. (5)
- b. Write notes on following cells basophils, eosinophils, neutrophils. (15)

END