55456

Index Number: Signature: Date:

CHRISTIAN SERVICE UNIVERSITY COLLEGE

FACULTY OF HEALTH AND APPLIED SCIENCES

DEPARTMENT OF PHYSICIAN ASSISTANTSHIP

END OF FIRST SEMESTER EXAMINATION, 2018/2019 ACADEMIC YEAR

PACS 101: HUMAN PHYSIOLOGY 1

MAY 2019 **Time: 1:30 minutes**

INSTRUCTIONS:

- **This paper is made up of SECTIONS 'A' and 'B'**
- **Answer all questions of SECTION 'A' on the question paper.**
- **Answer SECTION 'B' in the answer booklet provided**

Index Number: Signature: Date:

SECTION 'A': Answer each stem as true or false

1. **Concerning the meninges of the brain:**
   a. The Arachnoid mater is the toughest
   b. The Pia mater is the outermost layer
   c. The choroid plexus are located in the subarachnoid space
   d. CSF is found in the subdural space
   e. All the above are false

2. **Functions of the cerebellum include:**
   a. Reasoning
   b. Maintaining posture
   c. Vision
   d. Muscle coordination
   e. Maintaining balance

3. **Parasympathetic stimulation results in:**
   a. Tachycardia
   b. Tachypnea
   c. Decreased digestion
   d. Sweating
   e. All the above are true

4. **Concerning taste :**
   a. Taste area is located in the parietal lobes
   b. The thalamus is involved in the taste pathway
   c. Cranial nerves VII, IX, X, carry taste sensation
   d. The occipital lobe is involved in taste
   e. There are 4 primary taste sensations

5. **The following are monosynaptic stretch reflex:**
   a. Jaw jerk reflex
   b. Biceps reflex
   c. Deep tendon reflex
   d. Knee jerk reflex
   e. Withdrawal reflex

6. **The aqueous humour of the eye:**
   a. Is the clear fluid that fills the posterior chamber of the eye
   b. Helps maintain shape of the cornea
   c. Source of nutrient to the lens and cornea
   d. Responsible for waste management
   e. All the above are true

7. The following are components of the reflex arc:

a. Sense organ
b. An afferent neurone
c. An efferent neurone
d. An effector
e. One or more synapses

8. The sclera of the eye:

a. Is a layer of connective tissue
b. Innermost layer of the eyeball
c. Serves as attachment for the ocular muscles
d. Helps maintain the shape of the eyeball
e. All the above are true

9. The following are functions of the cerebellum EXCEPT:

a. Muscle coordination
b. Control of emotions
c. Balance
d. Posture
e. Muscle tone

10. Concerning CSF:

a. The aqueduct of sylvus connects the lateral ventricles to the third ventricle
b. CSF is slightly alkaline in nature
c. CSF returns to the vascular system by entering the dural venous sinuses via arachnoid granulations
d. CSF volume is lower on a ml/kg basis in children compared to adults
e. CSF glucose is 2/3rds of serum glucose

11. The following are functions of the cerebral hemisphere:

a. Reasoning
b. Balance
c. Processing auditory information
d. Posture
e. Processing visual information

12. Concerning the CNS:

a. The potential space between the Arachnoid mater and Dura mater is the subdural space
b. The potential space between the Arachnoid mater and Pia mater is the subarachnoid space
c. The potential space between the dura mater and Pia mater is the subdural space
d. The choroid plexus are located mainly in the third ventricle
e. The third ventricle is located within the thalamus

13. The following are as a result of muscarinic stimulation:

a. Diarrhoea
b. Salivation
c. Bradycardia
d. Sweating
e. All the above

14. The connective tissue that encloses the sarcolemma of an individual muscle fibre is called:

a. Epimysium
b. Perimysium
c. Endomysium
d. Fascicle
e. Paramysium

15. The following compartments can be measured directly using a marker:

a. Total body water
b. Plasma
c. Blood
d. Interstitial fluid
e. Extracellular fluid

16. Which one of these is not true about plasma membrane?

a. It is a selective barrier
b. It is very permeable to ion
c. It is involved in cell to cell communication
d. It is asymmetrical
e. It is fluid in nature

17. If a man's plasma volume is 3l and haematocrit is 0.40. What will be his total blood volume?

a. 1l
b. 2l
c. 3l
d. 4l
e. 5l

18. The extra cellular fluid contains large amounts of:

a. Sodium
b. Chloride
c. Bicarbonate
d. Potassium
e. Phosphate

19. Concerning active transport:

a. Ions and other substances move across the membrane using a carrier protein
b. Often substances are moved from a low concentration state to a high concentration state
c. Requires only kinetic energy
d. Requires kinetic energy and additional energy
e. A and C are true

20. The following are sources of energy for muscle contraction:

a. ATP
b. Muscle glycogen
c. Lactic acid
d. Creatine Phosphate
e. Alkaline phosphate

21. The following are special senses:

a. Gustation
b. Olfaction
c. Vision
d. audition
e. nociception

22. Which of these statements about smooth muscle fibres is false?

a. They are spindle shaped
b. They are uninucleate
c. They are not striated
d. They have focal densities
e. They have troponin

23. Total body water:

a. Is constant throughout life
b. Is about 73% in an infant
c. Is greater in adult females than adult males
d. Can be measured directly in the Lab
e. All above are false

24. In the skeletal muscle:

a. Myosin is found in the thick filament
b. The thin filaments contain actin and troponin
c. During excitation calcium ions are derived from the serum
d. The resting membrane potential is about -90mV
e. The resting membrane potential is 0mV

25. The following are true about acetylcholine:

a. It is synthesized from choline and acetyl coenzyme A
b. Its formation is catalyzed by acetyl cholinesterase
c. At the synaptic cleft , it is inactivated by hydrolysis
d. Re-uptake by the pre-synaptic neurons play an important inactivating acetyl choline
e. Acetylcholine receptors are found in all autonomic ganglia

26. The cerebellum:

a. Does not initiate motor activity in muscles
b. Receives impulses that originate from the vestibular apparatus
c. Compares intentions of the cortex with performance of the effector organ
d. Involved in determining the body's perception of pain
e. Involved in determining the body's perception of temperature

27. The following are true about the eyes:

a. Most refraction takes place at the lens
b. The ciliary muscle contract when the eye focuses on a near object
c. The photoreceptors in the fovea centralis are all cones
d. The retina is the neural layer
e. Both pupil dilate when light is shown in one eye

28. Concerning the vestibular system:

a. The saccule senses motion in the vertical plane
b. The otolith organs contain endolymph
c. Rotation in a swiveling chair causes the endolymph to move in the same direction of motion
d. The stereocilia are of uniform height
e. The hair cells spontaneously secrete a neurotransmitter

29. Increased sympathetic activity will result in the following:

a. Tachycardia
b. Dilation of pupils
c. Decreased respiratory rate
d. Lacrimation
e. All the above

30. The ion that triggers the release of transmitter by a neurone is:

a. Sodium
b. Chloride
c. Calcium
d. Potassium
e. magnesium

SECTION 'B': Write short Notes on the following:

1. What is the difference between conductive hearing loss and sensorineural hearing loss?
2. Briefly describe the process of hearing.
3. List the various taste buds and their location on the tongue.
4. List the components in the reflex arc, indicating each components function.

Examiner: L.D. OWUSU