

Self Assessment – Module A Anatomy and Physiology

- The sympathetic nervous system has nerve fibers that exit the spinal cord at: (circle all that apply)
 - Cranial
 - Thoracic**
 - Coccyx
 - Sacral
 - Lumbar**
- Label the neurotransmitter at the following locations:
 - Postganglionic nerves of the sympathetic nervous system **EPINEPHRINE**
 - Preganglionic nerves of the parasympathetic nervous system **ACETYLCHOLINE**
 - Postganglionic nerves of the parasympathetic nervous system **ACETYLCHOLINE**
 - Preganglionic nerves of the sympathetic nervous system **ACETYLCHOLINE**
- Which blood vessels are referred to as capacitance vessels? **VEINS**
- Name the enzyme that breaks down acetylcholine **CHOLINESTERASE**
- Nerve fibers that secrete acetylcholine are called **CHOLINERGIC** nerve fibers.
- Which blood vessels are responsible for regulating blood pressure because they have the most smooth muscle (resistance vessels)? **ARTERIOLES**
- Name the three adrenergic receptor sites
 - ALPHA (α)**
 - BETA-1 (β_1)**
 - BETA-2 (β_2)**
- Name the two cholinergic receptor sites
 - MUSCARINIC**
 - NICOTINIC**
- The vagus nerve is the **TENTH** cranial nerve.
- The glossopharyngeal nerve is the **NINTH** cranial nerve.
- Name the enzymes that break down epinephrine and norepinephrine.
 - CATECHOL-O-METHYL TRANSFERASE (COMT)**
 - MONAMINE OXIDASE (MAO)**
- Epinephrine is also called **ADRENALIN** because it is secreted from the **ADRENAL** gland.
- Nerve fibers that secrete epinephrine and norepinephrine are called **ADRENERGIC** nerve fibers.
- Nerve fibers that secrete acetylcholine are called **CHOLINERGIC**.

15. Explain the changes that occur in our body during sympathetic nervous system stimulation (fight or flight).

DILATION OF PUPILS

RESTRICTION OF SALIVA FLOW

ACCELERATION OF HEART RATE

DILATION OF BRONCHI

INHIBITS PERISTALSIS OF STOMACH

CONVERSION OF GLYCOGEN TO GLUCOSE

SECRETION OF ADRENALIN AND NOREPINEPHRINE

INHIBITION OF BLADDER CONTRACTION

16. Suctioning the airway may cause vagal stimulation which would cause the heart rate & blood pressure to **DECREASE** and the bronchial smooth muscle to **CONTRACT**.

17. Name the immunoglobulin that is involved in asthma and allergic reactions **IgE**

18. Name three clinical conditions that occur as a result of an antigen-antibody reaction (also called the inflammatory response).

BRONCHOCONSTRICTION

INCREASED MUCUS PRODUCTION

SWELLING OF THE TISSUES

19. Define the following units as either volume, flowrate or inspiratory time

- a. 40 mL **VOLUME**
- b. 600 mL **VOLUME**
- c. 35 L/sec **FLOW**
- d. 1 sec **TIME**
- e. 0.8 sec **TIME**
- f. 50 L/min **FLOW**

20. The autonomic nervous system innervates which three types of tissue/muscle?

- a. **BRONCHIAL SMOOTH MUSCLE**
- b. **CARDIAC MUSCLE**
- c. **ARTERIOLAR SMOOTH MUSCLE**

21. The normal tidal volume is **5-7** mL/kg.

22. If a patient weighs 150 lbs, calculate the normal range for their tidal volume

$$\frac{150\text{LBS}}{2.2\text{KG/LB}} = 68.2\text{KG} \quad 68.2\text{KG} \times 5\text{ML/KG} = 341\text{ML} \quad 68.2\text{KG} \times 7\text{ML/KG} = 477\text{ML}$$