

ANS: Autonomic Nervous System

Required:

1. Be able to place ANS in context with regard to the rest of the nervous system using terms: CNS, PNS, afferent, efferent, somatic, autonomic.
2. Separate or distinguish the (2) ANS divisions: Sympathetic vs. Parasympathetic, both anatomically and functionally. Use the following five phrases in your discussion: Thoraco-Lumbar, Cranio-Sacral, Flight-Fright-Fight, Rest & Restore, dual innervation..
3. Name and locate the (2) types of sympathetic ganglia and the (2) types of parasympathetic ganglia.
4. Diagram and describe the sympathetic path illustrating all (3) options. Explain the significance of the three options functionally.
5. Explain the role of the sympathetic stimulation of the adrenal medulla in overall sympathetic response
6. Diagram and describe the (2) options in the anatomical pathways of parasympathetic fibers.
7. Explain the term dual innervation in ANS physiology.
8. Explain the mass, generalized reaction or total body effect of sympathetic stimulation. List examples of sympathetic response.
9. Contrast this with the slow, one organ response of parasympathetic stimulation. List examples of parasympathetic response.
10. Describe the predominance of parasympathetic flow in daily life vs. sympathetic dominance in stressful times and its influence in stress-related disorders.
11. List and contrast the neurotransmitters of sympathetic post-ganglionic fibers vs. those from parasympathetic post-ganglionic fibers. Discuss their deactivation and how they contribute to sympathetic effects vs. parasympathetic effects.
12. List and describe briefly the types of sympathetic and parasympathetic effector receptors for neurotransmitters: adrenergic, alpha, beta, cholinergic, nicotinic, muscarinic.

13. Explain the significance of two receptors types for the same neurotransmitter: ex. .alpha and beta adrenergic receptors for norepinephrine.
14. Give an example of visceral reflex pathways and contrast these pathways to the structure of somatic reflex pathways.
15. Explain the role of the Hypothalamus and Cerebral Cortex in ANS control.