

1. Aggressive behavior takes three forms in rodents, offensive, defensive and predation. Please define them and describe their corresponding behavioral repertoires. Summarize the research on the neuronal and hormonal controls of these aggressive forms. (25%)
2. Depict the movements of various ions across the neuronal membrane throughout the action potential and explain how can an impulse, once generated, move unidirectionally toward the terminal, not the other way around. (25%)
3. Describe the hormonal controls and functional roles in the HPA axis underlying the adaptive responses to acute stress. (20%)
4. Describe the neural circuit and related neurotransmitters that mediate opiate-induced analgesia. (20%)
5. Delineate the coordination of flexor and extensor muscles of both legs when you walk at the level of the spinal cord. (10%)