

BIO 308: Human Physiology
Key for Practice Examination 2
2007 March 3

Answer Key

1. D Opioid peptides are inhibitory neuromodulators which act at synapses
2. E Substance P is both an excitatory neurotransmitter at 1st order pain synapses and a substance released from nociceptor endings.
3. C
4. D Convergence-projection mechanism
5. B Other opioid peptides are enkephalins and dynorphin
6. C Hypotension is characteristic of intense deep and visceral pain, which is mediated mainly by unmyelinated fibers (c-fibers), but I didn't I didn't include much about visceral pain in class, so I should not have included this question in the practice exam
7. E
8. A Otitis media can block sound wave transmission through the middle ear, thereby blocking air/ossicular conduction, but it does not affect the cochlea or the auditory nerve fibers, so bone conduction remains
9. A
10. D Cochlear nerve lesion would cause sensory-neural deafness, so both air conduction and bone conduction would be lost
11. B
12. C "Tonotopic" organization
13. D
14. D The dense otoliths are necessary for the utricle and saccule hair cells to respond to linear acceleration and gravity
15. A
16. B Reflexes would be intact and, in fact, would be exaggerated (spastic paralysis)
17. B
18. A
19. D
20. C
21. B
22. E
23. C P-K increase permits K to diffuse from the cells, leading to repolarization
24. B The AV node is autorhythmic, but at a slower rate than the SA node
25. B The first heart sound is due to closure of the mitral and tricuspid valves

26. A The papillary muscles help the mitral valve resist the high ventricular pressure during systole
27. E There is no phase of the cardiac cycle when both the A-V and semilunar valves are open
28. B $\text{Pulse} = \text{Systolic} - \text{Diastolic}$; $\text{Mean} = \text{Diastolic} + (1/3)\text{Pulse}$
29. E The two sides of the heart must always have the same stroke volume and cardiac output
30. A Most of the ventricular filling is passive (does not involve active contraction)
31. B
32. E
33. D Point "A" is the beginning of ventricular ejection
34. C
35. D
36. D The second heart sound is due to closure of the aortic and pulmonic valves at the beginning of ventricular diastole
37. C
38. E During the isovolumetric phases, no heart valves are open
39. D
40. C
41. B
42. E
43. C
44. D
45. E Arteriolar constriction would cause capillary hydrostatic pressure to drop, thus reducing the possibility of edema