Self-Assessment 6. Sleep & Wake 01 MAY 2014

For each numbered question or figure item, match the best answer.

1. This question deleted by the instructor

2-6. Sleep Patterns  
(a) bottlenose dolphin  
(b) cat  
(c) horse  
(d) human  
(e) river dolphin

2. _____ sleeps about 3 hours per day.
3. _____ sleeps about 8 hours per day.
4. _____ sleeps about 18 hours per day.
5. _____ sleeps one hemisphere at a time.
6. _____ sleeps for several seconds.

7-13. Slow-wave vs Rapid Eye Movement Sleep  
(a) SWS  
(b) REM

7. Delta waves.
8. Dreams.
10. Gamma waves.
11. Atonia.
12. Paradoxical or wake-like EEG.
13. Parasympathetic activity.

14-19. Cerebral Modes and Behavioral States  
(a) acetylcholine  
(b) histamine  
(c) norepinephrine  
(d) serotonin  
(e) GA  
(f) REM  
(g) SWA  
(h) SWS

20-21. Acetylcholine Metabolism  
(a) acetylcholinesterase  
(b) choline acetyltransferase
22-33. **Neurotransmitters**  (a) acetylcholine (b) dopamine (c) GABA (d) histamine (e) L-glutamate (f) norepinephrine (g) serotonin

22. basal forebrain
23. parabrachial region
24. locus ceruleus
25. neuromuscular junction
26. parasympathetic, preganglionic
27. parasympathetic, postganglionic
28. raphe nucleus
29. striatum, large aspiny neurons
30. striatum, medium spiny neurons
31. sympathetic, preganglionic
32. sympathetic, postganglionic
33. tuberomammillary nucleus

34-38. **Sleep Pressure** (a) ACh (b) adenosine (c) astrocytes (d) caffeine (e) ectonucleotidase

34. _____ release ATP during awake state.
35. _____ hydrolyzes extracellular ATP to adenosine.
36. _____ accumulates during awake state.
37. Adenosine inhibits _____ neurons in basal forebrain.
38. _____ blocks adenosine receptors.

39-42. **Sleep Disorders**  (a) cataplexy (b) fatal familial insomnia (c) narcolepsy (d) REM sleep behavior disorder

39. Atonia when awake.
40. REM sleep from wake without drowsiness.
41. REM sleep without atonia.
42. Prion disease of thalamus.

43-46. **Electrical Stimulation of Cerebral Cortex**
(a) Eduard Htizig & Gustav Fritsch (b) Michael Graziano (c) John Hughlings-Jackson (d) Wilder Penfield

43. Motor area by stimulating canine cortex.
44. Spread of seizures across motor area.
45. Motor areas by stimulating human cortex.
46. Meaningful movements by microstimulation of premotor cortex.

47-50. **Reinforcement Learning** (a) extinction (b) naïve (c) overtrained

Recordings of midbrain dopamine neurons during neutral tone (CS) and juice reward (US) pairings.
Baseline (+), elevated (+++), and suppressed (-) firing rates.

51-52. **Bonus** (a) left (b) right (c) neither

51. adenosine
52. caffeine