Self-Assessment 3. Basal Ganglia 06 MAR 2014

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

1-2. THESE TWO QUESTIONS WERE DELETED

3-8. Section through the Forebrain Vesicle
   (a) hippocampus
   (b) hypothalamus
   (c) neocortex
   (d) pallidal ridge
   (e) striatal ridge
   (f) thalamic eminence

9-10. Anatomy of the Basal Ganglia

9. Which nucleus is NOT part of the striatum?
   (a) caudate (b) nucleus accumbens (c) olfactory tubercle (d) pallidum (e) putamen

10. Which projection neurons do NOT use GABA?
    (a) pallidal (b) striatal (c) thalamic

11-14. Direct & Indirect Paths
   (a) direct (b) indirect (c) both (d) neither

11. D1 dopamine receptors on striatal neurons.
12. D2 dopamine receptors on striatal neurons.
13. Relays via the external segment of globus pallidus (GPe).
14. Outputs via the internal segment of globus pallidus (GPI).

15-18. Activity of Direct Pathway
   (a) cortex
   (b) pallidum
   (c) striatum
   (d) thalamus
19-30. Diseases of the Basal Ganglia
(a) drug addiction (b) dyskinesia (c) essential tremor (d) hemiballismus
(e) Huntington (f) obsessive-compulsive disorder (g) Parkinson (h) Tourette

21. Drug stimulation of dopamine neurons in VTA or synapses in nucleus accumbens.
22. Injury of subthalamic nucleus.
23. Loss of nigral dopamine neurons.
24. Loss of striatal neurons.
25. *Marche à petits pas*, or festinating gait.
26. Micrographia, decreasing amplitude and slowing rate when handwriting.
27. Motor and vocal tics.
28. Recurrent intrusive thoughts and ritualistic behavior.
29. Tremor while resting.
30. Tremor during active movement.

31-37. Chorea, Athetosis, Compulsions & Tics (True/False)

31. Chorea has graceful, dance-like movements.
32. Chorea has stereotyped, repeated movements.
33. Chorea has a premonitory urge and sense of relief on completion.
34. Athetosis has writhing movement of the body or face.
35. Compulsions have a premonitory urge and sense of relief on completion.
36. Tics are stereotyped, repeated movements and vocalizations.
37. Tics have a premonitory urge and sense of relief on completion.

38-45. Catecholamine Biosynthesis

(a) dopamine
(b) dopamine β-hydroxylase
(c) DOPA decarboxylase
(d) epinephrine
(e) L-DOPA
(f) L-tyrosine
(g) norepinephrine
(h) tyrosine hydroxylase

46-50. Dopamine

46. Rate-limiting step in dopamine synthesis:
   (a) DOPA decarboxylase (b) dopamine β-hydroxylase
   (c) monoamine oxidase (d) tyrosine hydroxylase
47. L-DOPA acts on dopamine receptors in Parkinson disease (True/False).
48. Knowing that reserpine depletes dopamine from synaptic vesicles,
   this drug should improve movement in Parkinson disease (True/False).
49. Dopamine is inactivated by: (a) decarboxylation (b) hydrolysis (c) reuptake
50. Dopamine is optically active (True/False).