

## Example questions Topics in Rehabilitation, Stroke/Parkinson's

**1) Which statement(s) is/are correct:**

**I) Spike-dependent neuroplasticity as a form of structural brain plasticity is caused by mechanisms such as long term potentiation or long term depression**

**II) Anti-Hebbian learning by putting rats in an enriched environment will result in an increment in cortical map plasticity in the barrel cortex.**

- a) Statement I and II are correct
- b) Statement I and II are both incorrect
- c) Statement I is correct and II incorrect
- d) Statement I is correct and II correct.

**2) Which statement(s) is/are correct:**

**I) Brain Derived Neurotrophic Factor is a protein that enhances synaptogenesis**

**II) Axonal and dendritic growth of nerves are probably the underlying mechanisms that drives exercise induced neuroplasticity in the adult brain**

- a) Statement I and II are correct
- b) Statement I and II are both incorrect
- c) Statement I is correct and II incorrect
- d) Statement I is correct and II correct.

**3) What is a possible disadvantage of using ambulatory activity monitoring to assess physical activity in a research setting?**

- a) Observation time can be in the order of multiple days
- b) Subjects can move freely in their natural environment
- c) Subjects may increase their activity behaviour to get a better measurement
- d) The ambulatory monitor provides an objective assessment of walking activity

**4) What is suggested to be an etiological mechanism behind the motor symptoms in Parkinson's Disease?**

- a) Overproduction of dopamine in the basal ganglia
- b) The accumulation of alpha-synuclein in the cerebro-spinal fluid
- c) Impaired use of proprioceptive feedback information to the brain to correct abnormal movements
- d) An idiopathic degeneration of the dopamine-producing cells in the striatum

**5) Gait variability can be quantified by the variation in stride time, what is true regarding gait variability in PD?**

- a) Decreased gait variability is observed during dual task walking
- b) Gait variability is associated with depression
- c) Increased gait variability is related to falls
- d) Gait variability is associated with rigidity

- 1) c
- 2) c
- 3) c
- 4) d
- 5) c