Self-test Questions – NEUR30003

1. What determines the membrane potential of the cell?
2. Where are electrical synapses likely to be found in the body and why?
3. How is long-term potentiation possible?
4. How do EEGs, electroencephalograms, work?
5. How do MEGs work and do they have good temporal or spatial resolution?
6. How do PET scans work?
7. What mechanism do MRIs use to image a structure? How is tractography related?
8. How do fMRIs work?
9. What will BMP signalling tell a cell to do? What does BMP stand for?
10. What is neurulation and what is an example defect which results from a failure in neurulation?
11. What is the difference between the signalling and outcome of roof and floor plate neurons?
12. What is the difference between symmetric and asymmetric divisions during morphogenesis?
13. What is the difference between pyramidal and interneurons? And compare their population densities in the brain as well.
14. How do axons find their new path and connections?
15. Give two examples of how apoptosis forms adult synaptic connections in the nervous system.
16. Describe the roles of the following four cells; (1) Schwann cells (2) Oligodendrocytes (3) Astrocytes (4) Microglia
17. Which cell is in the surface of the skin, rapidly-adapting, has a small receptive field and found in high densities on the skin?
18. Which cell is deep to the skin, slow at adapting, responds to sustained skin movement, large in receptive field size and low in population density?
19. Which cell is in the surface of the skin, slow at adapting, responds to indentation and has a small receptive field size?
20. Which cell is deep to the skin, rapidly adapting, responds to vibration, has a large receptor field size and has a low density in the skin?