

## Lecture no. 9 – Nerve tissue

**Elaboration of questions is voluntary, and you needn't to hand them in. But they can help you for better understanding and orientation. Use the presentation uploaded into the Study materials folder in the IS, recommended literature or electronic atlases available in the webpages of the Department. You can also use any information resource from the internet, but in that case, please use in the same time your critical thinking. If you have questions to the topic, please use the Discussion groups in the IS.**

1. List basic characteristics of central and peripheral nervous system (CNS and PNS). Explain what is grey and white matter and how they are organized in CNS and PNS.
2. Draw (schematize) and describe key components of neuron, and describe their functions.
3. What is Nissl substance? Is it present in axons of neurons?
4. The longest part of neuron is dendrite with its terminal button at the end. Is this true statement?
5. What is the axonal transport and what function it serves?
6. What is the difference between bipolar and multipolar neuron? Draw picture (schematic) of both these types of neurons.
7. Describe impulse conduction by motoric and sensitive neurons - define their key features.
8. Describe the morphological composition of synapse and the processes that are critical for impulse conduction on synapse.
9. List the key features of glial cells.
10. What do the terms *Membrane limitans gliae superficialis* and *Membrana limitans gliae perivascularis* stand for? What functions do these membranes play?
11. What type of cells produce myelin in brain? What is the role of myelin?
12. Microglia develops from neural tube and protects axodendritic junctions in CNS. Is this true statement?
13. Schwann cells have two ways of providing "home" for axons in peripheral nervous system. Draw (schematize) these two ways and explain why this is so.
14. Internodal segment (internode) is structure that is contributed by Schwann cells. Draw (schematize) this structure and explain its functional significance.
15. Typical peripheral nerve is composed of one axon "wrapped" by Schwann cells. Is this true or is the nerve organized in different way. Schematize.
16. Draw (schematize) the development of neural tube. Put it into the context of development of neural crest.
17. Does the peripheral nerve have capacity to regenerate? If yes, then describe how the regeneration proceeds.