Group D: Central nervous system – yellow

Central nervous system

1. **General structure of nervous system (neuron, glia, synapsis, mediators, receptors)**
- Main points**:** types of neurons and glial cells, synapses, mediators, function
- Figures**:** scheme of neuron and synapsis

2. **Spinal cord – grey matter**
- Main points**:** external description of the spinal cord, including vessels and meninges, structure of the grey matter, nuclei and Rexed's laminae, their connections and functions
- Figures**:** cross-section of the spinal cord

3. **Spinal cord – white matter and reflexes**
- Main points**:** external description of the spinal cord, including vessels and meninges, structure of the white matter, spinal tracts, reflex arch, types of reflexes
- Figures**:** cross-section of the spinal cord, scheme of a reflex arch

4. **Medulla oblongata, reflexes and function**
- Main points**:** external description of the medulla oblongata, including vessels and meninges, nuclei, tracts, their connections and functions
- Figures**:** cross-section of the medulla oblongata

5. **Pons, reflexes and function**
- Main points**:** external description of the pons, including vessels and meninges, division, nuclei, tracts, their connections and functions
- Figures**:** cross-section of the pons

6. **Mesencephalon, reflexes and function**
- Main points**:** external description of the mesencephalon, including vessels and meninges, division, nuclei, tracts, their connections and functions
- Figures**:** cross-section of the mesencephalon

7. **Reticular formation**
- Main points**:** location, division and structure, connections and functions
- Figures**:** scheme of the reticular formation

8. **Cerebellum – structure and function**
- Main points**:** external description of the cerebellum including vessels and meninges, internal structure, nuclei and their connections, functions of the cerebellum and their disorders
- Figures**:** structure of the cerebellar cortex

9. **Cerebellum – connections and function**
- Main points**:** overview of the afferent and efferent connections of cerebellum, functions of the cerebellum and their disorders
- Figures**:** simple scheme of the cerebellar tracts

10. **Diencephalon – division, epithalamus, subthalamus, metathalamus**
- Main points**:** external description, basic division and connections of the diencephalon, function
- Figures**:** frontal and horizontal cross-sections of the hemisphere

11. **Thalamus**
- Main points**:** external description, overview of the nuclei and their connections, function; thalamocortical connections
- Figures**:** frontal and horizontal cross-sections of the hemisphere

12. **Hypothalamus and pituitary gland**
- Main points**:** external description including vessels and meninges, division – nuclei, areae, their connections and function, relations between hypothalamus and pituitary gland, hormones, principles and importance of regulation
- Figures**:** frontal and horizontal cross-sections of the hemisphere, cross-section of the pituitary gland

13. **Internal capsule and white matter of telencephalon**
- Main points**:** description and basic division, tracts and their functions, vascular supply and consequences of its affection
- Figures**:** frontal and horizontal cross-sections of the hemisphere

14. **Cortical functional areas**
- Main points**:** overview of cortical areas, their afferent and efferent connections, functions and disorders, vascular supply
- Figures**:** scheme of the hemisphere with marked cortical areas

15. **Basal ganglia**
- Main points**:** division, structure, connections, function, mediators
- Figures**:** scheme of circuits of the basal ganglia, frontal and horizontal cross-sections of the hemisphere

16. **Limbic system**
- Main points**:** division, connections, function
- Figures**:** Andersen's circuit, Papez's circuit

17. **Association and commissural connections of brain**
- Main points**:** overview, explanation of terms, connections and functions
- Figures**:** frontal and horizontal cross-sections of the hemisphere

18. **Motor tracts**
- Main points**:** overview of tracts (pyramidal, extrapyramidal), connections, function
- Figures**:** cross-sections of the spinal cord, scheme of tracts

19. **Sensory tracts**
- Main points**:** overview of tracts (touch, pain, proprioception, cerebellar collaterals), connections, function
- Figures**:** cross-section of the spinal cord, scheme of tracts

20. **Visual tract**
- Main points**:** overview of tract, connections, function, collaterals, scotoma, pupillary reflex
- Figures**:** scheme of tract

21. **Auditory and vestibular tracts**
- Main points**:** overview of tracts, connections, function
- Figures**:** scheme of tracts

22. **Olfactory and gustatory tracts**
- Main points**:** overview of tracts, connections, function
- Figures**:** scheme of tracts

23. **Meninges, brain ventricles and cerebrospinal fluid**
- Main points**:** layers of meninges and spaces between them, organization of meninges of the brain and spinal cord, division, borders and communications of brain ventricles, cisternae and their content, production, circulation and absorption of the cerebrospinal fluid
- Figures**:** topography of the vertebral canal, cross-section of the cranial meninges, cross-section of the ventricles

24. **Arteries of brain and spinal cord**
- Main points**:** deep and superficial arteries, arteries of the spinal cord
- Figures**:** circle of Willis, scheme of the vascular supply of the cortex

25. **Veins of brain and spinal cord**
- Main points**:** deep and superficial veins, dural sinuses, veins of spinal cord
- Figures**:** scheme of paired and unpaired venous sinuses, cross-section of the venous sinus, cross-section of the cavernous sinus

26. **Chemical systems of brain**
- Main points**:** overview of chemical systems, their division, location and function
- Figures**:** schematic connections and location of the particular systems

27.**Topography of cranial cavity**

- Main points**:** division and contents of the whole intracranial cavity and its particular parts
- Figures**:** tentorial notch

Senses

28.**Eye – anterior segment**

- Main points**:** external and internal structure of the eye, production of the ventricular fluid, accomodation, innervation and vascular supply, corneal and pupillary reflexes
- Figures**:** cross-section of the eye, iridocorneal angle

29.**Eye – posterior segment**

- Main points**:** external and internal structure of the eye, detailed structure of the retina, innervation and vascular supply, visual tract
- Figures**:** cross-section of the eye, eye fundus

30.**Accessory structures of eye**

- Main points**:** structure of eyelids, division of conjunctiva, production and drainage of tears
- Figures**:** cross-section of the eyelid, scheme of the lacrimal system

31.**Oculomotor muscles and topography of orbit**

- Main points**:** origin, insertion, innervation and function of the muscles, their lesions, layers of orbit
- Figures**:** scheme of muscle insertion and direction of movement during particular muscle action

32.**External ear**

- Main points**:** external description and structure of the auricle, external meatus and eardrum, topographic relations, vascular supply and innervation, principle of hearing, auditory tract
- Figures**:** otoscopic view of the eardrum

33.**Middle ear**

- Main points**:** structure of eardrum, division, borders and contents of the tympanic cavity, principle of hearing, auditory tract
- Figures**:** otoscopic view of the eardrum, medial wall of the tympanic cavity

34.**Internal ear**

- Main points**:** division, location and structure, endolymph and perilymph, function of particular compartments, vascular supply and innervation, receptor sites, principles of hearing and equilibrium and their disorders, auditory and vestibular tracts
- Figures**:** overview of membranous labyrinth, Corti's organ, receptors of vestibular system

35.**Smell**

- Main points**:** location of olfactory organ, structure, borders of nasal cavity, principles of smell perception, olfactory tract and its disorders, brain structures involved in olfaction
- Figures**:** olfactory tract

36.**Taste**

- Main points**:** location of the gustatory organ, structure, borders of the oral cavity and pharynx, principle of taste perception, gustatory tract and its disorders
- Figures**:** gustatory tract, innervation of tongue

37.**Touch**

- Main points**:** overview, structure and location of receptors, structure of skin, principle of touch perception, sensory tracts and their disorders, dermatomes
- Figures**:** scheme of sensory tracts, dermatomes

38.**Pain**

- Main points**:** overview, structure and location of pain receptors, structure of skin, principle of pain perception, sensory tracts and their disorders, dermatomes and Head's zones, slow and fast pain
- Figures**:** scheme of sensory tracts, dermatomes

39.**Interoceptors**

- Main points**:** overview, structure and location of interoreceptors, principle of touch perception, particular nerves and structures
- Figures**:** juxtaglomerular apparatus