Unit 13:

Ventricular system, meninges and blood vessels of the brain

GENERAL OBJECTIVES:

- Understand the organization of protective layers of the brain.
- Dural venous sinuses, infoldings/reflections and layers of dura mater.
- Arachnoid and pia mater end meningeal spaces.
- Circulation and function of cerebrospinal fluid.
- Arterial blood supply of the brain.
- Understand the principle of the organization of cranial nerve nuclei.

SPECIFIC OBJECTIVES:

Cranial nerves **(repetition)**
Describe location of cranial nerve nuclei according to the segment of the brainstem (pons, medulla, mesencephalon) and their nature (in relation to sulcus limintans):

Motor: somatic, branchial and visceral
Sensory: visceral, special and general

For each and every cranial nerve name the nature of fibers they contain, how they leave the surface of the brainstem and how they leave cranial cavity.

Cranial meninges
Describe in details all three meningeal layers (structure, function) and their relationships with bones of the skull, brain surfaces and vessels (arteries and veins) of the brain. Include their own blood supply and innervation. Understand the nature/function of meningeal spaces.

Ventricles of the brain
Go through the organization/relations of different ventricles of the brain (lateral, third, fourth) and understand how are they interconnected and how they drain into subarachnoid space. Understand what are subarachnoid cisterns and how is CSF secreted and absorbed into venous blood.

Arterial blood supply of the brain
Describe in detail internal carotid and vertebral arteries (origin, path, branching, termination). Describe cerebral/cerebellar/spinal arteries and their principal branches.
Describe principal veins of the brain