

Subject: Human Anatomy II

Instructor: Dr. Arooba.

Section: B

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Total marks: 50

Attempt the following questions. Add diagrams where needed.

Each carries 10 marks.

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1. What are the major features of intracranial fossae of the skull?

ANS: The floor of the cranial cavity is divided into three distinct depressions. They are known as the anterior cranial fossa, middle cranial fossa and posterior cranial fossa. Each fossa accommodates a different part of the brain.

The anterior cranial fossa is the most shallow and superior of the three cranial fossae. It lies superiorly over the nasal and orbital cavities. The fossa accommodates the anteroinferior portions of the frontal lobes of the brain.

In this article, we shall look at the borders, contents and clinical correlations of the anterior cranial fossa.

BORDERS

The anterior cranial fossa consists of three bones: the frontal bone, ethmoid bone and sphenoid bone

It is bounded as follows:

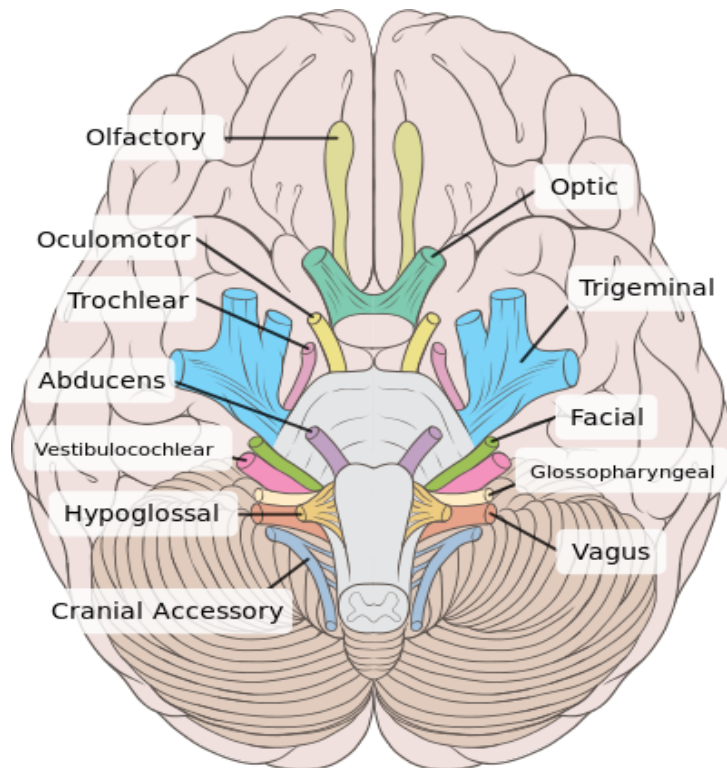
- Anteriorly and laterally it is bounded by the inner surface of the frontal bone.
- Posteriorly and medially it is bounded by the limbus of the sphenoid bone. The limbus is a bony ridge that forms the anterior border of the prechiasmatic sulcus (a groove running between the right and left optic canals).

- Posteriorly and laterally it is bounded by the lesser wings of the sphenoid bone (these are two triangular projections of bone that arise from the central sphenoid body).
- The floor consists of the frontal bone, ethmoid bone and the anterior aspects of the body and lesser wings of the sphenoid bone

2. Write note on the cranial nerves.

ANS: **CRANIAL NERVES**

Cranial nerves are those nerves which arise from the brain and **brain stem** rather than the spinal cord. Nerves arising from the spinal cord are the **spinal nerves**. There are 12 pairs of cranial nerves and these pairs of nerves passage through **foramina in the skull**, either individually or in groups. Cranial nerves are traditionally referred to by Roman numerals and these numerals begin cranially and run caudally.



The most cranial nerve is the **Olfactory nerve (I)** which runs from the nasal cavity through to the olfactory bulb. The next most cranial is the **Optic nerve (II)** which runs from the eyes to the **thalamus**. Cranial nerves III to XII all exit from the brain stem and innervate the head, neck and organs in the thorax and abdomen. In order of most cranial to caudal, these include the **Oculomotor nerve (III)**, the **Trochlear nerve (IV)**, the **Trigeminal nerve (V)**, the **Abducens nerve (VI)**, the **Facial nerve (VII)**, the **Vestibulocochlear nerve (VIII)**, the **Glossopharyngeal nerve (IX)**, the **Vagus nerve (X)**, the **Accessory nerve (XI)** and the

Hypoglossal nerve (XII).

3. Write note on the salient features of norma frontalis and norma occipitalis of skull.

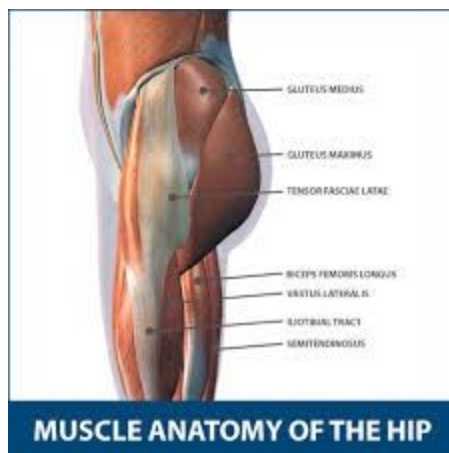
ANS:

Norma Occipitalis.—When viewed from behind the cranium presents a more or less circular outline. In the middle line is the posterior part of the **sagittal suture** connecting the parietal bones; extending downward and lateral ward from the hinder end of the sagittal suture is the deeply serrated **lambdoidal suture** joining the parietals to the occipital and continuous below with the **parietomastoid** and **occipitomastoid sutures**; it frequently contains one or more sutural bones. Near the middle of the occipital squama is the **external occipital protuberance** or **inion**, and extending lateralward from it on either side is the superior nuchal line, and above this the faintly marked highest nuchal line. The part of the squama above the inion and highest lines is named the **planum occipitale**, and is covered by the Occipitalis muscle; the part below is termed the **planum nuchale**, and is divided by the median nuchal line which runs downward and forward from the inion to the foramen magnum; this ridge gives attachment to the ligamentum nuchæ. The muscles attached to the planum nuchale are enumerated on p. 130. Below and in front are the mastoid processes, convex laterally and grooved medially by the mastoid notches. In or near the occipitomastoid suture is the **mastoid foramen** for the passage of the mastoid emissary vein.

Norma Frontalis .—When viewed from the front the skull exhibits a somewhat oval outline, limited *above* by the frontal bone, *below* by the body of the mandible, and *laterally* by the zygomatic bones and the mandibular rami. The upper part, formed by the frontal squama, is smooth and convex. The lower part, made up of the bones of the face, is irregular; it is excavated laterally by the orbital cavities, and presents in the middle line the **anterior nasal aperture** leading to the nasal cavities, and below this the transverse slit between the upper and lower dental arcades. *Above*, the **frontal eminences** stand out more or less prominently, and beneath these are the **superciliary arches**, joined to one another in the middle by the **glabella**. On and above the glabella a trace of the **frontal suture** sometimes persists; beneath it is the frontonasal suture, the mid-point of which is termed the **nasion**. Behind and below the frontonasal suture the frontal articulates with the frontal process of the maxilla and with the lacrimal. Arching transversely below the superciliary arches is the upper part of the margin of the orbit, thin and prominent in its lateral two-thirds, rounded in its medial third, and presenting, at the junction of these two portions, the **supraorbital notch** or **foramen**

4. What do you know about the muscles of hip and knee?

MUSCLE OF HIP:The movements that can be carried out at the **hip** joint are listed below, along with the principle **muscles** responsible for each action: Flexion – iliopsoas, rectus femoris, sartorius, pectineus. Extension – gluteus maximus; semimembranosus, semitendinosus and biceps femoris (the



hamstrings)

MUSCLE OF KNEE:The movements that can be carried out at the **hip** joint are listed below, along with the principle **muscles** responsible for each action: Flexion – iliopsoas, rectus femoris, sartorius,

pectineus. Extension – gluteus maximus; semimembranosus, semitendinosus



and biceps femoris (the hamstrings)

5. Write a comprehensive note on the femoral triangle.

ANS: **Femoral triangle**. The **femoral triangle** is a wedge-shaped area formed by a depression between the muscles of the thigh. It is located on the medial aspect of the proximal thigh. It is the region of the passage of the main blood vessels between the pelvis and the lower limb, as well as a large nerve supplying the thigh.