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SECTION. B

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Section: B

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Attempt the following questions. Add diagrams where needed.

Each carries 10 marks.

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

Answer.

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

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.

The bones of the base of the skull. The anterior cranial fossa has been outlined.

Foramina

The ethmoid bone in particular contains the main foramina (openings that transmit vessels and nerves) of the anterior cranial fossa. The cribriform plate is a sheet of bone seen either side of the crista galli which contains numerous small foramina – these transmit olfactory nerve fibres (CN I) into the nasal cavity. It also contains two larger foramen

- Anterior ethmoidal foramen – transmits
- the anterior ethmoidal artery, nerve and vein.

Posterior ethmoidal foramen – transmits the posterior ethmoidal artery, nerve and vein

2. Write note on the cranial nerves.
    - Answer .

    The cranial nerves provide motor and sensory supply mainly to the structures within the head and neck. The sensory supply includes both "general" sensation such as temperature and touch, and "special" senses such as taste, vision, smell, balance and hearing.

    The cranial nerves emerge from the central nervous system above the level of the first vertebrae of the vertebral column.[2] Each cranial nerve is paired and is present on both sides. There are conventionally twelve pairs of cranial nerves, which are described with Roman numerals I–XII. Some considered there to be thirteen pairs of cranial nerves, including cranial nerve zero. The numbering of the cranial nerves is based on the order in which they emerge from the brain and brainstem, from front to back.[2]

    The terminal nerves (0), olfactory nerves (I) and optic nerves (II) emerge from the cerebrum, and the remaining ten pairs arise from the brainstem, which is the lower part of the brain.[3]

    The cranial nerves are considered components of the peripheral nervous system (PNS),[3] although on a structural level the olfactory (I), optic (II), and trigeminal (V) nerves are more accurately considered part of the central nervous system (CNS).[4]

    The cranial nerves are in contrast to spinal nerves, which emerge from segments of the

spinal cord.[3]

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

- Answer

Skull

Cranium (Brain case) or Facial skeleton or Neurocranium or Viscerocranium.

Calvaria Cranial base or Cranial Vault or Base of skull or Upper part of brain case.

The 8 Bones of cranium (4 single and 2 paired)

- Frontal bone (single)
- Ethmoid bone (single)
- Sphenoid bone (single)
- Occipital bone (single)
- Parietal bone (paired)
- Temporal bone (paired)

The 14 Bones of facial skeleton (2single and 6 paired)

- Vomer (single)
- Nasal bone (paired)
- Lacrimal bone (paired)
- Inferior concha (paired)
- Palatine bone (paired)
- Zygomatic bone (paired)
- Maxilla (paired)
- Mandible (single=two halves)

Skull: Exterior views

1. Norma Verticalis (Superior View)

Bones: Frontal, Parietals, Occipital (squamous part)

Sutures: Coronal, Sagittal, Lambdoid, Frontal (Metopic) [occasional]

Features: Parietal eminence, Bregma, Lambda

Foramen: Parietal

2. Norma Frontalis (Anterior View)

Bones: Frontal, Nasal, Maxilla, Zygomatic

Features: Supercilary arches, Glabella, Nasion, Orbit, Anterior nasal aperture, Anterior nasal spine

Foramina: Infraorbital, Zygomaticofacial

3. Norma Lateralis (Lateral View)

Bones: Frontal, Parietal, Sphenoid (greater wing), Temporal (squamous part , and zygomatic, mastoid and styloid processes), Occipital, Zygomatic, Maxilla

Features: Pterion, Superior and Inferior temporal lines, Supramastoid crest, Temporal fossa, Infratemporal fossa, Pterygopalatine fossa

Foramina: External accoustic meatus, Zygomaticotemporal foramen

4. Norma Occipitalis (Posterior view)

Bones: Parietals, Occipital, Temporal, (mastoid part)

Sutures: Lambdoid, Parietomastoid, Occipitomastoid

Features: External occipital protuberance, Superior nuchal line, Inferior nuchal line, Inion

5. Norma Basalis (Inferior View)

Bones: Maxilla (Palatine processes, alveolar processes), Palatine (Horizontal plate), Sphenoid (Body, greater wings, and medial and lateral pterygoid plates), Temporal (Squamous, petromastoid, and tympanic parts), Occipital (Basilar and squamous parts)

Features: Incissive fossa, Posterior nasal spine, Pharyngeal tubercle, Pterygoid fossa, Scaphoid fossa, Pterygoid hamulus, Infratemporal crest, Spine of sphenoid, Mandibular fossa, Articular tubercle, Jugular fossa, Styloid process, Occipital condyle, Mastoid process, Mastoid notch (groove for posterior belly of digastric muscle), External occipital crest, Superior and inferior nuchal lines, External occipital protuberance

Foramina: Incisive Greater and lesser palatine, Foramen ovale, Foramen spinosum, Foramen lacerum, Opening for auditory tube, Carotid canal, Pterygoid canal, Foramen magnum, Hypoglossal canal, Jugular foramen, Stylomastoid foramen, Posterior nasal apertures (choanae)

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

- Answer

Hip joint

The hip joint is a ball and socket synovial joint, formed by an articulation between the pelvic acetabulum and the head of the femur.

It forms a connection from the lower limb to the pelvic girdle, and thus is designed for stability and weight-bearing – rather than a large range of movement.

In this article, we shall look at the anatomy of the hip joint – its articulating surfaces, ligaments and neurovascular supply.

Knee

In humans and other primates, the knee joins the thigh with the leg and consists of two joints: one between the femur and tibia (tibiofemoral joint), and one between the femur and patella (patellofemoral joint).[1] It is the largest joint in the human body.[2] The knee is a modified hinge joint, which permits flexion and extension as well as slight internal and external rotation. The knee is vulnerable to injury and to the development of

5. Write a comprehensive note on the femoral triangle.

- Answer

  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.

  This article will outline the borders and contents of the femoral triangle, as well as the fascial compartments and relevant clinical anatomy.

The end