

NEET MDS General Anatomy

Sample Paper – 1

Duration: 11 Minutes

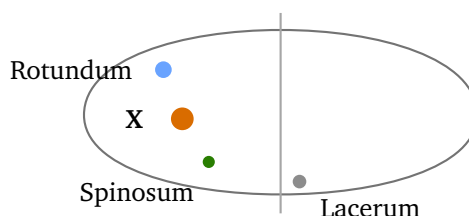
Maximum Marks: 56

Instructions

- This paper contains **14** Multiple Choice Questions (Single Best Response), modelled on the General Anatomy including Embryology and Histology content of **NEET MDS** conducted by NBEMS.
- The **14-question** length matches the number of General Anatomy items you actually meet in the real 240-question paper.
- Each correct answer carries **+4 marks**. There is **negative marking of 1 mark** for every incorrect answer; unattempted questions carry no penalty.
- Every question has **exactly one best answer**. Choose the single most appropriate option.
- Attempt this practice paper in one timed sitting of about **11 minutes**, the pace the real computer-based test demands.

Head and Neck Osteology

Q1. In the schematic of the middle cranial fossa below, the foramen marked **X** lies posterolateral to the foramen rotundum and transmits the largest division of the trigeminal nerve. The structure passing through **X** is:



- (A) The mandibular division of the trigeminal nerve
- (B) The maxillary division of the trigeminal nerve
- (C) The middle meningeal artery



(D) The internal carotid artery

Q2. The pterion, the H-shaped meeting point of the frontal, parietal, temporal and sphenoid bones, is the thinnest part of the lateral skull wall. A blow at this site is dangerous because it overlies:

(A) The superficial temporal artery

(B) The maxillary artery

(C) The facial artery

(D) The anterior division of the middle meningeal artery

Q3. The inferior alveolar nerve, which you anaesthetise routinely before extracting a lower molar, enters the mandible through the:

(A) Mental foramen

(B) Lingula

(C) Mandibular foramen

(D) Retromolar foramen

Cranial Nerves

Q4. All the intrinsic and extrinsic muscles of the tongue receive their motor supply from a single cranial nerve, with the sole exception of palatoglossus. That nerve is the:

(A) Glossopharyngeal nerve

(B) Hypoglossal nerve

(C) Lingual nerve

(D) Vagus nerve

Q5. Taste sensation from the anterior two-thirds of the tongue travels centrally along the:

(A) Lingual nerve alone, as a branch of the mandibular nerve

(B) Glossopharyngeal nerve



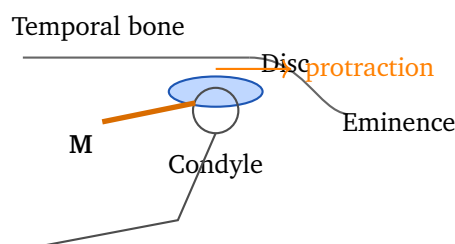
- (C) Greater petrosal nerve
- (D) Chorda tympani, a branch of the facial nerve

Q6. A patient presents with complete weakness of the muscles of facial expression on the right side, but taste on the anterior two-thirds of the tongue and lacrimation are both normal. The lesion of the facial nerve is most likely at the:

- (A) Internal acoustic meatus, above the geniculate ganglion
- (B) Stylomastoid foramen
- (C) Geniculate ganglion itself
- (D) Pons, at the motor nucleus

Muscles, Temporomandibular Joint and Triangles of the Neck

Q7. In the sagittal view of the temporomandibular joint below, the muscle marked **M** inserts into the pterygoid fovea of the condyle and the articular disc, and pulls both forwards onto the articular eminence to begin opening the mouth. Muscle **M** is the:



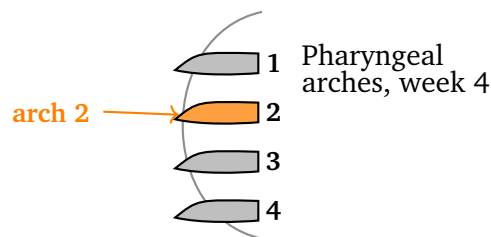
- (A) Lateral pterygoid
- (B) Medial pterygoid
- (C) Masseter
- (D) Temporalis

Q8. The carotid triangle, within which you can expose the common carotid artery and its bifurcation, is bounded by the posterior belly of digastric above, the superior belly of omohyoid anteroinferiorly, and behind by the:

- (A) Posterior border of sternocleidomastoid
- (B) Mylohyoid
- (C) Anterior border of sternocleidomastoid
- (D) Anterior border of trapezius

General Embryology and Pharyngeal Arches

Q9. The pharyngeal arches are numbered in the schematic below, each carrying its own nerve. The nerve of the arch marked **2** is the:



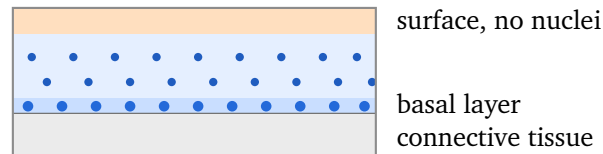
- (A) Trigeminal nerve
 - (B) Facial nerve
 - (C) Glossopharyngeal nerve
 - (D) Vagus nerve
- Q10.** Meckel's cartilage is the cartilage of the first pharyngeal arch. Its dorsal end ossifies to form:
- (A) The stapes and the styloid process
 - (B) The greater cornu of the hyoid bone
 - (C) The malleus and the incus
 - (D) The thyroid cartilage
- Q11.** A newborn is brought to you with a unilateral cleft of the upper lip. This defect results from failure of fusion of:
- (A) The maxillary process with the medial nasal process
 - (B) The two palatine shelves with each other
 - (C) The two mandibular processes with each other



(D) The lateral nasal process with the maxillary process

General Histology

Q12. The section below shows the epithelium covering the hard palate and the attached gingiva, with a surface layer of flattened dead cells that have lost their nuclei. This epithelium is:



- (A) Simple squamous epithelium
- (B) Pseudostratified ciliated columnar epithelium
- (C) Non-keratinised stratified squamous epithelium
- (D) Keratinised stratified squamous epithelium

Q13. The bone cell that is large and multinucleated, derives from the monocyte-macrophage lineage, sits in a Howship's lacuna and resorbs bone matrix, is the:

- (A) Osteoblast
- (B) Osteoclast
- (C) Osteocyte
- (D) Osteoprogenitor cell

Vascular and Lymphatic Supply of the Head and Neck

Q14. The artery whose pulsation you can feel where it crosses the lower border of the mandible at the anteroinferior angle of masseter, and which supplies the upper and lower lips, is the:

- (A) Facial artery
- (B) Superficial temporal artery
- (C) Lingual artery
- (D) Maxillary artery



Detailed Solutions**Q1.****Solution**

Concept – the foramina of the middle cranial fossa: Each foramen in the greater wing of the sphenoid transmits a fixed set of structures.

Step 1 – read the position given: The question says **X** lies posterolateral to the foramen rotundum.

Step 2 – identify the foramen in that position: Posterolateral to rotundum is the foramen ovale.

Step 3 – recall what ovale transmits: Foramen ovale transmits the **mandibular division of the trigeminal nerve (V3)**.

Step 4 – confirm against the second clue: The question calls it the largest division of the trigeminal nerve, and V3 is indeed the largest of the three divisions.

Why the other options are wrong:

- B, the maxillary division (V2): passes through the foramen **rotundum**, which the diagram marks separately.
- C, the middle meningeal artery: passes through the foramen **spinosum**, marked separately in the diagram.
- D, the internal carotid artery: enters through the carotid canal and crosses above the foramen lacerum, not ovale.

Final Answer: Mandibular division of the trigeminal nerve ⇒ A

Answer: (A) [Go Back to Q1](#)

Q2.**Solution**

Concept – the pterion: The pterion is a surface landmark of surgical importance on the lateral skull.

Step 1 – locate it: It lies about 4 cm above the zygomatic arch and 3.5 cm behind the frontozygomatic suture.

Step 2 – recall what lies deep to it: Internally, the **anterior division of the middle meningeal artery** grooves the bone here.

Step 3 – link to the clinical danger: The bone is thinnest at this point, so a blow fractures it easily and tears that artery.



Step 4 – name the consequence: The torn artery bleeds between the skull and dura, producing an **extradural haematoma**.

Why the other options are wrong:

- A, the superficial temporal artery: runs in the superficial fascia outside the skull, so a fracture does not classically tear it.
- B, the maxillary artery: lies in the infratemporal fossa, deep to the ramus of the mandible.
- C, the facial artery: runs across the face and mandible, far from the pterion.

Final Answer: Anterior division of the middle meningeal artery ⇒ **D**

Answer: (D) [Go Back to Q2](#)

Q3.

Solution

Concept – the course of the inferior alveolar nerve: This nerve is the one you block for lower posterior teeth.

Step 1 – trace its origin: It is a branch of the mandibular division of the trigeminal nerve, given off in the infratemporal fossa.

Step 2 – find where it enters bone: It enters the **mandibular foramen** on the medial surface of the ramus.

Step 3 – follow it inside: It then runs forward in the mandibular canal, supplying the lower teeth along the way.

Step 4 – note where it leaves: Its terminal part emerges at the mental foramen as the mental nerve.

Why the other options are wrong:

- A, the mental foramen: is where the nerve **exits** as the mental nerve, not where it enters.
- B, the lingula: is the bony tongue of the mandible that guards the mandibular foramen. It is a landmark, not an opening.
- D, the retromolar foramen: is an inconstant accessory foramen and not the standard route.

Final Answer: Mandibular foramen ⇒ **C**

Answer: (C) [Go Back to Q3](#)



Q4.

Solution

Concept – motor supply of the tongue: The tongue muscles have one motor nerve, with a single exception.

Step 1 – recall the general rule: All intrinsic muscles and the extrinsic genioglossus, hyoglossus and styloglossus are supplied by the **hypoglossal nerve (XII)**.

Step 2 – recall the exception: Palatoglossus is developmentally a palatal muscle, so it is supplied by the pharyngeal plexus, that is the vagus (X).

Step 3 – match to the question: The question asks for the nerve supplying everything *except* palatoglossus, which is the hypoglossal nerve.

Why the other options are wrong:

- A, the glossopharyngeal nerve: carries taste and general sensation from the posterior third of the tongue, and supplies only stylopharyngeus as a motor nerve.
- C, the lingual nerve: is purely sensory to the tongue, carrying general sensation from the anterior two-thirds.
- D, the vagus nerve: supplies palatoglossus, which is precisely the muscle excluded in the question.

Final Answer: Hypoglossal nerve $\Rightarrow$ **B**

Answer: (B) [Go Back to Q4](#)

Q5.

Solution

Concept – taste versus general sensation on the tongue: The anterior two-thirds of the tongue has two different nerves for two different modalities.

Step 1 – separate the modalities: General sensation, that is touch, pain and temperature, travels in the lingual nerve.

Step 2 – trace the taste fibres: Taste fibres leave the tongue with the lingual nerve, but only travel with it briefly.

Step 3 – follow them onward: They then join the **chorda tympani**, which is a branch of the facial nerve (VII).

Step 4 – follow to the ganglion: The chorda tympani carries them to their cell bodies in the geniculate ganglion, and on to the nucleus of the solitary tract.



Why the other options are wrong:

- A, the lingual nerve alone: carries only general sensation centrally. The taste fibres branch off it into the chorda tympani.
- B, the glossopharyngeal nerve: carries taste from the **posterior third**, not the anterior two-thirds.
- C, the greater petrosal nerve: carries taste from the palate and is secretomotor to the lacrimal gland.

Final Answer: Chorda tympani, a branch of the facial nerve ⇒ **D**

Answer: (D) [Go Back to Q5](#)

Q6.

Solution

Concept – localising a facial nerve lesion by what is spared: The facial nerve gives off its branches in a fixed order, so the pattern of loss tells you the level.

Step 1 – list the branches in order: Greater petrosal (lacrimation), then nerve to stapedius, then chorda tympani (taste), and finally the motor branches to the face.

Step 2 – read what is preserved here: Lacrimation is normal, so the lesion is **below** the greater petrosal nerve.

Step 3 – use the second preserved function: Taste is normal, so the lesion is also **below** the chorda tympani.

Step 4 – read what is lost: Only the muscles of facial expression are paralysed, so the lesion is at or beyond the last branch point.

Step 5 – name the site: The nerve leaves the skull through the **stylomastoid foramen** carrying only motor fibres, so a lesion there gives exactly this picture.

Why the other options are wrong:

- A, the internal acoustic meatus: is above all the branches, so lacrimation and taste would both be lost.
- C, the geniculate ganglion: is above the chorda tympani, so taste would be lost as well.
- D, the pons at the motor nucleus: would also cause motor-only loss, but a nuclear lesion typically brings neighbouring signs such as a sixth nerve palsy, and is not the most likely site for isolated facial weakness.

Final Answer: Stylomastoid foramen ⇒ **B**



Answer: (B) [Go Back to Q6](#)

Q7.

Solution

Concept – the muscle that opens the jaw: Three of the four muscles of mastication close the jaw, one begins opening it.

Step 1 – read the insertion given: The diagram muscle inserts into the pterygoid fovea of the condyle **and** the articular disc.

Step 2 – recall which muscle has that dual insertion: Only the **lateral pterygoid** attaches to both the condyle and the disc.

Step 3 – match the action: It pulls the condyle and disc forward onto the articular eminence, which is protraction.

Step 4 – link protraction to opening: That forward translation is the movement that begins depression of the mandible, so the lateral pterygoid initiates mouth opening.

Why the other options are wrong:

- B, the medial pterygoid: runs from the pterygoid plate to the angle of the mandible and **elevates** the jaw.
- C, the masseter: runs from the zygomatic arch to the ramus and is a powerful **elevator**.
- D, the temporalis: elevates the jaw, and its posterior fibres **retract** it, which is the opposite of protraction.

Final Answer: Lateral pterygoid ⇒ A

Answer: (A) [Go Back to Q7](#)

Q8.

Solution

Concept – boundaries of the carotid triangle: The carotid triangle is one of the subdivisions of the anterior triangle of the neck.

Step 1 – recall the three boundaries: Above, the posterior belly of digastric; anteroinferiorly, the superior belly of omohyoid; behind, the **anterior border of sternocleidomastoid**.

Step 2 – read what the question already gives: It supplies the first two boundaries, so the answer must be the third.



Step 3 – confirm with the contents: Within it lie the common carotid artery and its bifurcation, the internal jugular vein and the hypoglossal nerve, which is why it is the surgical approach to the carotid.

Why the other options are wrong:

- A, the posterior border of sternocleidomastoid: bounds the **posterior** triangle of the neck, not the carotid triangle.
- B, the mylohyoid: forms the floor of the submandibular (digastric) triangle.
- D, the anterior border of trapezius: is the posterior boundary of the posterior triangle.

Final Answer: Anterior border of sternocleidomastoid ⇒ C

Answer: (C) [Go Back to Q8](#)

Q9.

Solution

Concept – the nerve of each pharyngeal arch: Each arch keeps its own cranial nerve wherever its muscles migrate.

Step 1 – recall the list: Arch 1 takes the trigeminal, arch 2 the **facial**, arch 3 the glossopharyngeal, and arches 4 and 6 the vagus.

Step 2 – read the arch asked for: The diagram marks arch **2**, so the nerve is the facial nerve (VII).

Step 3 – confirm through its muscles: The second arch forms the muscles of facial expression, stapedius, stylohyoid and the posterior belly of digastric, all of which are supplied by the facial nerve.

Why the other options are wrong:

- A, the trigeminal nerve: is the nerve of arch **1**, supplying the muscles of mastication.
- C, the glossopharyngeal nerve: is the nerve of arch **3**, supplying stylopharyngeus.
- D, the vagus nerve: is the nerve of arches **4 and 6**, supplying the pharyngeal and laryngeal muscles.

Final Answer: Facial nerve ⇒ B

Answer: (B) [Go Back to Q9](#)



Q10.

Solution

Concept – the fate of Meckel’s cartilage: The first arch cartilage does not persist as cartilage in the adult, except at its two ends.

Step 1 – take the dorsal end: The dorsal end ossifies into two of the ear ossicles, the **malleus and the incus**.

Step 2 – take the middle part: The middle part regresses, leaving behind the sphenomandibular ligament and the anterior ligament of the malleus.

Step 3 – take the ventral part: The ventral part acts only as a template. The mandible itself forms around it by intramembranous ossification, not from the cartilage.

Step 4 – match to the question: The question asks specifically about the dorsal end, so the answer is the malleus and incus.

Why the other options are wrong:

- A, the stapes and styloid process: come from Reichert’s cartilage, which is the **second** arch cartilage.
- B, the greater cornu of the hyoid: is a **third** arch derivative.
- D, the thyroid cartilage: is a derivative of the **fourth** arch.

Final Answer: Malleus and incus $\Rightarrow$ C

Answer: (C) [Go Back to Q10](#)

Q11.

Solution

Concept – development of the upper lip: The upper lip is built from processes that must meet and fuse in the fifth to seventh week.

Step 1 – name the contributors: The two medial nasal processes fuse in the midline to form the intermaxillary segment, which becomes the philtrum.

Step 2 – add the lateral part: The **maxillary process** on each side grows medially to meet the medial nasal process.

Step 3 – state what happens on failure: If the maxillary process fails to fuse with the medial nasal process on one side, that side of the upper lip stays open, giving a **unilateral cleft lip**.

Step 4 – note the timing: This is a separate event from palate fusion, which is why cleft lip and cleft palate can occur alone or together.



Why the other options are wrong:

- B, the two palatine shelves: failing to fuse produces a **cleft palate**, not a cleft lip.
- C, the two mandibular processes: failing to fuse would give the very rare cleft of the **lower** lip.
- D, the lateral nasal process with the maxillary process: failing to fuse produces an **oblique facial cleft** running towards the eye.

Final Answer: Maxillary process with the medial nasal process ⇒ A

Answer: (A) [Go Back to Q11](#)

Q12.

Solution

Concept – classifying an epithelium: Name an epithelium by two things, the number of layers and the shape of the surface cells.

Step 1 – count the layers in the section: The diagram shows several layers of cells sitting on a basal layer, so it is **stratified**.

Step 2 – read the surface cells: The surface cells are flattened, so the shape is **squamous**.

Step 3 – use the nuclei clue: The surface layer has lost its nuclei, which is the defining feature of **keratinisation**.

Step 4 – confirm with the site: The hard palate and attached gingiva are masticatory mucosa, which takes friction from food and is therefore keratinised.

Why the other options are wrong:

- A, simple squamous: is a single layer, but the section clearly shows many layers.
- B, pseudostratified ciliated columnar: lines the respiratory tract, and its cells are columnar with cilia, neither of which is shown.
- C, non-keratinised stratified squamous: lines the lining mucosa such as the cheek and floor of the mouth, and its surface cells **keep** their nuclei.

Final Answer: Keratinised stratified squamous epithelium ⇒ D

Answer: (D) [Go Back to Q12](#)



Q13.

Solution

Concept – the four bone cells: Each bone cell has a distinct origin, appearance and job.

Step 1 – use the nuclei clue: The cell described is **multinucleated**, and only the osteoclast is.

Step 2 – use the lineage clue: It comes from the **monocyte-macrophage** line, unlike the other three which come from mesenchyme.

Step 3 – use the location clue: It sits in a Howship's lacuna, the shallow pit it has itself excavated on the bone surface.

Step 4 – use the function clue: It resorbs matrix by secreting acid and enzymes through its ruffled border. All four clues converge on the **osteoclast**.

Why the other options are wrong:

- A, the osteoblast: is mononucleated and **forms** bone matrix rather than resorbing it.
- C, the osteocyte: is a mature osteoblast trapped in a lacuna within the matrix, and it maintains bone rather than resorbing it.
- D, the osteoprogenitor cell: is an undifferentiated mesenchymal stem cell that divides to give osteoblasts.

Final Answer: Osteoclast ⇒ B

Answer: (B) [Go Back to Q13](#)

Q14.

Solution

Concept – the branches of the external carotid artery: Each branch has a recognisable course and a place where you can feel it.

Step 1 – use the landmark given: The artery crosses the lower border of the mandible at the anteroinferior angle of masseter.

Step 2 – name the artery with that landmark: That is the classic point where the **facial artery** becomes palpable as it turns onto the face.

Step 3 – confirm with the territory: The facial artery gives the inferior and superior labial arteries, which supply the lower and upper lips.

Step 4 – trace it onward: It continues as the angular artery at the medial angle of the eye, where it anastomoses with the ophthalmic artery.



Why the other options are wrong:

- B, the superficial temporal artery: is palpated **in front of the tragus**, above the zygomatic arch, and supplies the scalp.
- C, the lingual artery: passes deep to hyoglossus to supply the tongue and is not palpable at the mandible.
- D, the maxillary artery: runs deep into the infratemporal fossa and is not palpable at all.

Final Answer: Facial artery ⇒ A

Answer: (A) [Go Back to Q14](#)



Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	A	2	D	3	C	4	B	5	D
6	B	7	A	8	C	9	B	10	C
11	A	12	D	13	B	14	A		

