NEET MDS General Anatomy

Sample Paper – 7

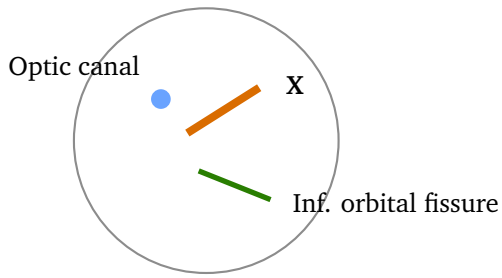
Duration: 11 Minutes **Maximum Marks: 56**

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. The schematic below shows the apex of the right orbit from the front. The opening marked **X** lies between the greater and lesser wings of the sphenoid and transmits the oculomotor, trochlear, ophthalmic and abducent nerves together with the ophthalmic veins. Opening **X** is the:



Right orbit, apex from the front

(A) The optic canal

(B) The superior orbital fissure

(C) The foramen rotundum

(D) The inferior orbital fissure

Q2. The pterygopalatine fossa is a small space behind the maxilla that acts as a crossroads for nerves and vessels. The opening through which it communicates directly with the **middle cranial fossa** is the:

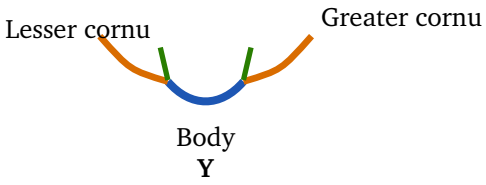
(A) The inferior orbital fissure

(B) The foramen rotundum

(C) The sphenopalatine foramen

(D) The greater palatine canal

Q3. The bone marked **Y** below is U-shaped, lies in the anterior neck at the level of the third cervical vertebra, has a body with paired greater and lesser cornua, and is unique in that it is slung by muscles and ligaments and articulates with no other bone. Bone **Y** is the:



(A) The vomer

(B) The lacrimal bone

(C) The palatine bone

(D) The hyoid bone

Cranial Nerves

Q4. The infraorbital nerve is the terminal branch of the maxillary division of the trigeminal nerve and reaches the face through the infraorbital foramen. On the face it supplies the skin of the:

(A) Lower eyelid, side of the nose and upper lip

(B) Upper eyelid, forehead and anterior scalp

(C) Lower lip and the chin

(D) Cheek over buccinator and the adjacent buccal mucosa

Q5. You are about to extract a maxillary second molar. The nerve you must block, because it enters the posterior surface of the maxilla and supplies the maxillary molars along with the adjacent buccal gingiva, is the:

(A) Middle superior alveolar nerve

(B) Posterior superior alveolar nerve

(C) Anterior superior alveolar nerve

(D) Greater palatine nerve

Q6. A local anaesthetic is deposited at the incisive papilla, immediately palatal to the maxillary central incisors, to numb the palatal mucosa of the anterior one-third of the palate. The nerve blocked is the:

(A) Greater palatine nerve

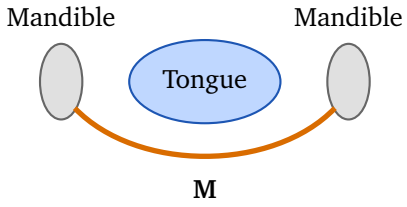
(B) Lesser palatine nerve

(C) Nasopalatine nerve

(D) Anterior superior alveolar nerve

Muscles, Temporomandibular Joint and Triangles of the Neck

Q7. The coronal section below passes through the floor of the mouth. The muscle marked **M** runs from the mylohyoid line of one side of the mandible to the same line on the other side, meeting its fellow in a midline raphe, and forms the muscular diaphragm that supports the tongue. Muscle **M** is the:



(A) Geniohyoid

(B) Hyoglossus

(C) Mylohyoid

(D) Digastric

Q8. The digastric, stylohyoid, mylohyoid and geniohyoid are classed together as one group of muscles because, when the mandible is held fixed, they share the common action of:

(A) Elevating the hyoid bone and the floor of the mouth during swallowing

(B) Depressing the hyoid bone after swallowing is complete

(C) Retracting the mandible at the temporomandibular joint

(D) Protruding and deviating the tongue

General Embryology and Pharyngeal Arches

Q9. The notochord is the midline rod that induces the neural plate and defines the axis of the embryo, but it almost completely disappears once the vertebral bodies form around it. Its only true remnant in the adult is:

(A) The ligamentum nuchae

(B) The anterior longitudinal ligament

(C) The annulus fibrosus of the intervertebral disc

(D) The nucleus pulposus of the intervertebral disc

Q10. Which of the following groups of muscles is derived **entirely** from the mesoderm of the first pharyngeal arch?

(A) Muscles of mastication, mylohyoid, anterior belly of digastric, tensor tympani and tensor veli palatini

(B) Muscles of facial expression, stapedius, stylohyoid and posterior belly of digastric

(C) Stylopharyngeus, salpingopharyngeus and palatopharyngeus

(D) Cricothyroid, levator veli palatini and the pharyngeal constrictors

Q11. In a histological section of a jaw at about the seventh week of intrauterine life, the dental lamina shows rounded epithelial outgrowths pushing into the underlying ectomesenchyme, with no infolding of the epithelium and no organised dental papilla yet. This is the:

(A) Bud stage

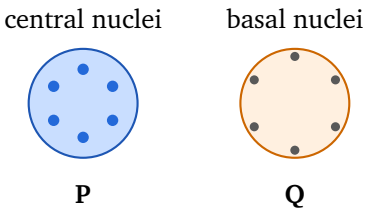
(B) Cap stage

(C) Bell stage

(D) Apposition stage

General Histology

Q12. The two secretory end pieces below are drawn side by side. Acinus **P** is made of pyramidal cells with dark basophilic cytoplasm and round nuclei placed centrally, and it secretes a thin watery amylase-rich fluid. The major salivary gland built **entirely** of acini of type **P** is the:



(A) Submandibular gland

(B) Parotid gland

(C) Sublingual gland

(D) Minor palatine glands

Q13. Flattened, branched contractile cells with long processes lie between the basal lamina and the secretory cells of a salivary acinus, embracing it like a basket, and squeeze the acinus to expel its secretion into the duct. These cells are:

(A) Plasma cells

(B) Serous demilune cells

(C) Myoepithelial cells

(D) Intercalated duct cells

Vascular and Lymphatic Supply of the Head and Neck

Q14. A patient squeezes a boil on the upper lip and develops a cavernous sinus thrombosis. Apart from the valveless facial and ophthalmic veins, the pterygoid venous plexus offers a second intracranial route because it communicates with the cavernous sinus through:

(A) The retromandibular vein and then the external jugular vein

(B) The internal jugular vein at the jugular foramen

(C) The pharyngeal venous plexus and the vertebral venous plexus

(D) Emissary veins passing through the foramen ovale and the sphenoidal emissary foramen

Detailed Solutions

Q1.

Solution

Concept – the openings at the apex of the orbit: Three openings lead out of the orbit posteriorly, and each carries a fixed list of structures.

Step 1 – use the bony boundary given: The question says **X** lies between the greater and lesser wings of the sphenoid. Only the **superior orbital fissure** sits in that gap.

Step 2 – check the nerve list: The superior orbital fissure transmits the oculomotor (III), trochlear (IV), all three branches of the ophthalmic division (lacrimal, frontal, nasociliary) and the abducent (VI).

Step 3 – check the veins: It also transmits the superior ophthalmic vein, and usually the inferior ophthalmic vein, draining backwards into the cavernous sinus.

Step 4 – confirm with the diagram: The optic canal is marked separately above and medial to **X**, and the inferior orbital fissure is marked separately below it, so **X** can only be the superior orbital fissure.

Step 5 – note the clinical value: A fracture here gives the superior orbital fissure syndrome, that is total ophthalmoplegia with a fixed dilated pupil and numbness over the forehead.

Why the other options are wrong:

- A, the optic canal: lies in the lesser wing alone and transmits only the optic nerve and the ophthalmic artery. It is marked separately in the diagram.
- C, the foramen rotundum: opens from the middle cranial fossa into the pterygopalatine fossa, not into the orbit, and carries the maxillary nerve (V2).
- D, the inferior orbital fissure: lies between the greater wing of the sphenoid and the maxilla, and transmits the infraorbital nerve and vessels and the inferior ophthalmic vein. It is marked separately below **X**.

Final Answer: The superior orbital fissure $\Rightarrow$ $\boxed{\text{B}}$

Answer: (B) Go Back to Q1

Q2.

Solution

Concept – the pterygopalatine fossa as a crossroads: This tiny pyramidal space behind the maxilla has an opening on almost every wall, and each one leads to a different region.

Step 1 – take the posterior wall: Posteriorly, the **foramen rotundum** opens from the middle cranial fossa and delivers the maxillary nerve (V2) into the fossa. The pterygoid canal opens just below it and brings the nerve of the pterygoid canal.

Step 2 – take the anterior wall: Anteriorly, the inferior orbital fissure leads into the orbit.

Step 3 – take the medial wall: Medially, the sphenopalatine foramen leads into the nasal cavity.

Step 4 – take the inferior opening: Below, the greater palatine canal leads down to the palate.

Step 5 – match to the question: The question asks only for the route to the **middle cranial fossa**, and that is the foramen rotundum.

Why the other options are wrong:

- A, the inferior orbital fissure: connects the fossa to the **orbit**, and carries the infraorbital nerve forward.
- C, the sphenopalatine foramen: connects the fossa to the **nasal cavity**, and carries the nasopalatine and posterior nasal nerves and the sphenopalatine artery.
- D, the greater palatine canal: connects the fossa downwards to the **palate**, and carries the greater and lesser palatine nerves.

Final Answer: The foramen rotundum $\Rightarrow$ B

Answer: (B) Go Back to Q2

Q3.

Solution

Concept – the one bone in the body with no articulation: Every bone in the skeleton meets another bone at a joint, with a single exception.

Step 1 – read the shape clue: The bone is U-shaped with a body, two greater cornua and two lesser cornua. That is exactly the shape of the **hyoid bone**, as the diagram shows.

Step 2 – read the level clue: It lies in the anterior neck at the level of the third cervical vertebra, in the angle between the mandible and the thyroid cartilage. That again fits the hyoid.

Step 3 – read the decisive clue: It articulates with no other bone. The hyoid is suspended from the styloid processes by the stylohyoid ligaments and is held by the suprahyoid and infrahyoid muscles, so it forms no bony joint at all.

Step 4 – note why this matters: Because it is free-floating, the hyoid can be moved up and down by muscle action during swallowing and speech, and it is the anchor for the tongue and the larynx.

Why the other options are wrong:

- A, the vomer: is a flat midline bone that articulates with the sphenoid, the ethmoid, the maxillae and the palatine bones to form the lower nasal septum.
- B, the lacrimal bone: is the smallest bone of the face and articulates with the frontal, ethmoid and maxilla and the inferior nasal concha.
- C, the palatine bone: is L-shaped and articulates with the maxilla, sphenoid, ethmoid, vomer, inferior concha and its fellow of the opposite side.

Final Answer: The hyoid bone $\Rightarrow$ D

Answer: (D) Go Back to Q3

Q4.

Solution

Concept – the cutaneous territory of the infraorbital nerve: The maxillary nerve ends on the face, and its terminal branch has a defined patch of skin.

Step 1 – trace the nerve: The maxillary nerve leaves the middle cranial fossa through the foramen rotundum, crosses the pterygopalatine fossa, and enters the orbit through the inferior orbital fissure.

Step 2 – follow it through the orbital floor: In the floor of the orbit it becomes the **infraorbital nerve**, running first in the infraorbital groove and then in the infraorbital canal.

Step 3 – find where it reaches the face: It emerges at the infraorbital foramen, about 1 cm below the infraorbital margin, and immediately breaks up into its terminal twigs.

Step 4 – name the twigs: The palpebral branches supply the **lower eyelid**, the nasal branches supply the **side of the nose**, and the superior labial branches sup-

ply the **upper lip**.

Step 5 – link to practice: This is why an infraorbital block numbs the upper lip, and why a blow-out fracture of the orbital floor causes numbness in exactly this triangle of skin.

Why the other options are wrong:

- B, the upper eyelid, forehead and scalp: is supplied by the supraorbital and supratrochlear nerves, which are branches of the frontal nerve from the **ophthalmic** division (V1).
- C, the lower lip and chin: is supplied by the mental nerve, the terminal branch of the inferior alveolar nerve from the **mandibular** division (V3).
- D, the cheek and buccal mucosa: is supplied by the buccal nerve, also a branch of V3, not by the infraorbital nerve.

Final Answer: Lower eyelid, side of the nose and upper lip $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q4

Q5.

Solution

Concept – the three superior alveolar nerves: The maxillary teeth are supplied by three nerves, each with its own zone.

Step 1 – take the posterior zone: The **posterior superior alveolar nerve** leaves the maxillary nerve in the pterygopalatine fossa, runs down over the infratemporal surface of the maxilla, and enters small foramina on that surface.

Step 2 – list what it supplies: Inside the bone it supplies the maxillary molars, their periodontium, the adjacent buccal gingiva and the lining of the maxillary sinus.

Step 3 – note the one exception: The mesiobuccal root of the maxillary first molar is usually supplied by the middle superior alveolar nerve, which is why a posterior superior alveolar block alone can leave that root sensitive.

Step 4 – match to the question: The tooth to be extracted is the maxillary second molar, which lies squarely in the posterior superior alveolar territory.

Why the other options are wrong:

- A, the middle superior alveolar nerve: supplies the maxillary premolars and the mesiobuccal root of the first molar, and it is absent in a large proportion of people.

- C, the anterior superior alveolar nerve: is a branch of the infraorbital nerve within the canal and supplies the maxillary incisors and canine.
- D, the greater palatine nerve: is sensory to the **palatal** mucosa behind the canine and gives no supply to the pulps of the molars.

Final Answer: Posterior superior alveolar nerve $\Rightarrow$ B

Answer: (B) Go Back to Q5

Q6.

Solution

Concept – the sensory map of the palate: The palate has two sensory zones, divided roughly at the canine.

Step 1 – take the anterior zone: The mucosa in front of the canines, that is the mucosa palatal to the incisors, is supplied by the **nasopalatine nerve**.

Step 2 – trace that nerve: The nasopalatine nerve arises in the pterygopalatine fossa, passes through the sphenopalatine foramen into the nose, crosses the roof of the nose, and runs down the nasal septum.

Step 3 – find where it reaches the palate: It descends through the incisive canal and emerges on the palate at the **incisive foramen**, which is covered by the incisive papilla.

Step 4 – link to the injection: Depositing anaesthetic at the incisive papilla therefore floods the incisive canal and blocks both nasopalatine nerves, numbing the anterior one-third of the palate from canine to canine.

Step 5 – note the practical point: This is one of the most painful intraoral injections because the palatal mucosa is tightly bound down to bone, so deposit slowly.

Why the other options are wrong:

- A, the greater palatine nerve: supplies the **posterior** two-thirds of the hard palate behind the canine, and is blocked at the greater palatine foramen near the second or third molar.
- B, the lesser palatine nerve: supplies the **soft** palate and the tonsillar region, not the anterior hard palate.
- D, the anterior superior alveolar nerve: supplies the pulps of the incisors and canine and their labial gingiva, not the palatal mucosa.

Final Answer: Nasopalatine nerve $\Rightarrow$ C

Answer: (C) Go Back to Q6

Q7.

Solution

Concept – the oral diaphragm: The floor of the mouth is not just soft tissue, it has a true muscular sheet slung across it.

Step 1 – read the origin given: The muscle arises from the **mylohyoid line**, the oblique ridge on the inner surface of the body of the mandible. Only the mylohyoid takes origin from that line.

Step 2 – read the insertion given: The posterior fibres reach the body of the hyoid, while the rest meet the opposite muscle in a **median fibrous raphe** running from the chin to the hyoid, exactly as the diagram shows.

Step 3 – state the function: The two mylohyoids together form the muscular floor of the mouth, the oral diaphragm, which supports the tongue and raises the floor during the first stage of swallowing.

Step 4 – note the surgical importance: The free posterior border of the mylohyoid is the gap through which the deep part of the submandibular gland and its duct pass, and through which pus from a lower molar can escape into the neck to cause Ludwig's angina.

Why the other options are wrong:

- A, the geniohyoid: is a narrow strap running from the inferior genial tubercle to the hyoid. It lies **above** the mylohyoid and is far too narrow to form a diaphragm.
- B, the hyoglossus: is a quadrilateral muscle from the greater cornu and body of the hyoid up into the side of the tongue. It is an extrinsic tongue muscle, not a floor.
- D, the digastric: has two bellies joined by an intermediate tendon and lies **below** the mylohyoid, in the submandibular triangle. It does not arise from the mylohyoid line.

Final Answer: Mylohyoid $\Rightarrow$ C

Answer: (C) Go Back to Q7

Q8.

Solution

Concept – why the suprahyoid muscles are one group: Muscles are grouped by what they do to the hyoid bone, not by where they come from.

Step 1 – name the group: Digastric, stylohyoid, mylohyoid and geniohyoid all lie **above** the hyoid bone, so they are the suprahyoid group.

Step 2 – state the shared action: Every one of them runs downwards to the hyoid from a fixed point above. So when the mandible and skull are held fixed, they all **elevate the hyoid** and with it the floor of the mouth and the larynx.

Step 3 – put it into swallowing: That elevation pulls the larynx up under the tongue base, the epiglottis folds back over the laryngeal inlet, and the bolus is guided into the pharynx. This is the first, voluntary stage of deglutition.

Step 4 – reverse the fixed point: If the infrahyoid muscles instead fix the hyoid from below, the same suprahyoid muscles pull in the opposite direction and **depress the mandible**, which is how the digastric and mylohyoid help open the mouth against resistance.

Step 5 – note the mixed nerve supply: The group has four different nerves (mylohyoid nerve for mylohyoid and the anterior belly of digastric, facial nerve for stylohyoid and the posterior belly, C1 fibres through the hypoglossal for geniohyoid), which proves the grouping is functional, not developmental.

Why the other options are wrong:

- B, depressing the hyoid: is the action of the **infrahyoid** (strap) muscles, that is sternohyoid, omohyoid, sternothyroid and thyrohyoid.
- C, retracting the mandible: is done by the posterior fibres of temporalis and the deep part of masseter, which are muscles of mastication.
- D, protruding the tongue: is done by genioglossus, an extrinsic tongue muscle supplied by the hypoglossal nerve, and it is not part of this group.

Final Answer: Elevating the hyoid bone and the floor of the mouth during swallowing $\Rightarrow$ A

Answer: (A) Go Back to Q8

Q9.

Solution

Concept – the fate of the notochord: The notochord is an inducer, not a permanent structure.

Step 1 – recall its origin: It develops from the notochordal process of the third week, which arises from the primitive node and canalises to form the definitive notochord.

Step 2 – recall its job: It induces the overlying ectoderm to form the neural plate, and it induces the sclerotomes of the somites to form the vertebral bodies around it.

Step 3 – follow what happens to it: Once the vertebral bodies chondrify, the notochord lying **within** each vertebral body is squeezed out and disappears completely.

Step 4 – find the surviving segments: Only the parts lying **between** adjacent vertebral bodies survive. Each of these expands into the gelatinous **nucleus pulposus** at the centre of the intervertebral disc.

Step 5 – add the clinical link: Notochordal remnants can also persist elsewhere along the axis, and a chordoma is a tumour arising from them, most often in the sacrococcygeal or spheno-occipital region.

Why the other options are wrong:

- A, the ligamentum nuchae: is a fibroelastic septum in the back of the neck derived from mesenchyme, with no notochordal contribution.
- B, the anterior longitudinal ligament: is an ordinary dense fibrous ligament of mesodermal origin running down the front of the vertebral bodies.
- C, the annulus fibrosus: is the concentric fibrocartilage ring of the disc and develops from the **sclerotome**, not from the notochord. It is the nucleus inside it that is notochordal.

Final Answer: The nucleus pulposus of the intervertebral disc $\Rightarrow$ D

Answer: (D) Go Back to Q9

Q10.

Solution

Concept – muscles carry their arch with them: Each pharyngeal arch contributes a fixed set of muscles, and those muscles keep their arch nerve however far they migrate.

Step 1 – list the first arch muscles: The first arch gives the four muscles of mastication (masseter, temporalis, medial pterygoid, lateral pterygoid), plus **mylohyoid**, the **anterior belly of digastric**, **tensor tympani** and **tensor veli palatini**.

Step 2 – check the list against the nerve rule: Every one of these eight muscles is supplied by a branch of the mandibular division of the trigeminal nerve, which is the nerve of the first arch. That internal consistency confirms the list.

Step 3 – test option A against the list: Option A names exactly those eight muscles and nothing else, so it is entirely first arch.

Step 4 – use the tensor mnemonic: Both muscles whose name begins with "tensor" in the head belong to arch 1, while the muscle beginning with "levator" (levator veli palatini) does not. This is a fast way to separate them in the exam.

Why the other options are wrong:

- B, facial expression muscles with stapedius, stylohyoid and the posterior belly of digastric: is the complete **second** arch list, supplied by the facial nerve.
- C, stylopharyngeus, salpingopharyngeus and palatopharyngeus: the group is not first arch at all. Stylopharyngeus is the sole **third** arch muscle, and the other two belong to the pharyngeal plexus territory.
- D, cricothyroid, levator veli palatini and the constrictors: are **fourth** arch muscles, supplied by the vagus through the superior laryngeal nerve and the pharyngeal plexus.

Final Answer: Muscles of mastication, mylohyoid, anterior belly of digastric, tensor tympani and tensor veli palatini $\Rightarrow$ A

Answer: (A) Go Back to Q10

Q11.

Solution

Concept – staging tooth development by the shape of the epithelium: The stages of odontogenesis are named after what the enamel organ looks like, so read the shape first.

Step 1 – read the timing: Around the sixth to seventh week the dental lamina has already formed as a horseshoe-shaped thickening of oral epithelium along each jaw.

Step 2 – read the shape described: The lamina shows **rounded outgrowths** pushing into the ectomesenchyme. A simple ball of epithelium with no infolding is the **bud**, so this is the bud stage, also called the stage of initiation.

Step 3 – confirm with what is absent: There is no infolding of the deep surface and no organised dental papilla. Both of those appear only at the next stage, so the section cannot be later than bud.

Step 4 – count the buds: Ten buds form in each jaw, one for each deciduous tooth, which is why failure at this stage gives anodontia or hypodontia and overactivity gives supernumerary teeth.

Why the other options are wrong:

- B, the cap stage: is when the deep surface of the bud **invaginates** into a cap shape and the dental papilla and dental follicle first become recognisable. The question says neither has happened.
- C, the bell stage: is later still, when the enamel organ has four distinct layers and histodifferentiation into ameloblasts and odontoblasts begins.
- D, the apposition stage: is when the hard tissues, enamel and dentine, are actually laid down. That is far beyond what is described.

Final Answer: Bud stage $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q11

Q12.

Solution

Concept – serous versus mucous acini: The two kinds of secretory end piece look different down the microscope, and each major gland has its own mix.

Step 1 – read the cell shape and stain in P: Pyramidal cells with **dark basophilic** cytoplasm means the cytoplasm is packed with rough endoplasmic reticulum, which is the hallmark of a protein-secreting **serous** cell.

Step 2 – read the nuclei in P: The nuclei are **round and central**, exactly as drawn in acinus **P**. Serous cells keep their nuclei in the middle of the cell.

Step 3 – read the secretion: A thin watery fluid rich in amylase is serous saliva. So acinus **P** is serous, and acinus **Q**, with pale cytoplasm and flattened nuclei pushed against the base, is mucous.

Step 4 – match the gland: The **parotid** is the only major salivary gland that is purely serous in the adult. That is why parotid saliva is watery and carries most of the amylase.

Step 5 – note the clinical link: Because the parotid has no mucous cells to thicken its secretion, its watery saliva and its long duct make it the gland most often affected by ascending infection and by stones of the ductal system elsewhere.

Why the other options are wrong:

- A, the submandibular gland: is **mixed** but predominantly serous, roughly a 9 to 1 seromucous mix, so it is not built entirely of serous acini.
- C, the sublingual gland: is mixed but predominantly **mucous**, so most of its acini look like **Q**, not **P**.
- D, the minor palatine glands: are purely **mucous**, and they are minor glands, not a major salivary gland as the question demands.

Final Answer: Parotid gland $\Rightarrow$ B

Answer: (B) Go Back to Q12

Q13.

Solution

Concept – the contractile cell of the acinus: An acinus cannot empty itself, so it needs a cell that squeezes it.

Step 1 – read the position given: The cell lies **between the basal lamina and the secretory cells**. Only the myoepithelial cell occupies that plane.

Step 2 – read the shape given: It is flattened and branched, with long processes that wrap around the acinus. That is why it is called a **basket cell**.

Step 3 – read the function given: It contracts to expel secretion. Myoepithelial cells are of **epithelial** origin but contain actin and myosin, so they behave like smooth muscle while sitting inside the epithelium.

Step 4 – tie the three clues together: Position, shape and contractility all converge on the **myoepithelial cell**. Around ducts the same cell is spindle-shaped

rather than star-shaped.

Step 5 – note the clinical link: Because myoepithelial cells can proliferate, they contribute to the mixed picture of pleomorphic adenoma, the commonest salivary gland tumour.

Why the other options are wrong:

- A, plasma cells: sit in the **connective tissue** between acini and secrete IgA. They are not contractile and are not inside the basal lamina.
- B, serous demilune cells: are crescent-shaped caps of **serous** cells sitting on mucous acini in mixed glands. They are secretory, not contractile, and they lie inside the acinus, not around it.
- D, intercalated duct cells: are low cuboidal cells forming the first, narrow part of the duct system **beyond** the acinus. They modify the secretion but do not squeeze the acinus.

Final Answer: Myoepithelial cells $\Rightarrow$ C

Answer: (C) Go Back to Q13

Q14.

Solution

Concept – the pterygoid venous plexus and the danger area of the face: The veins of the head have no valves, so blood and infection can travel either way.

Step 1 – locate the plexus: The pterygoid venous plexus is a dense network of veins in the **infratemporal fossa**, lying around and within the lateral pterygoid muscle.

Step 2 – list its ordinary drainage: It drains backwards into the maxillary vein, which joins the superficial temporal vein to form the retromandibular vein.

Step 3 – find the intracranial link: It also communicates **upwards** with the cavernous sinus through emissary veins that pass through the **foramen ovale** and through the sphenoidal emissary foramen (foramen of Vesalius). This is a direct route into the skull.

Step 4 – add the anterior link: The plexus also connects forwards with the facial vein through the deep facial vein, and the facial vein connects with the superior ophthalmic vein through the angular vein.

Step 5 – explain the danger area: The triangle between the upper lip and the bridge of the nose is the danger area, because squeezing a boil there can push infected thrombus backwards through these valveless channels into the cavernous

sinus, giving proptosis, chemosis, ophthalmoplegia and a life-threatening thrombosis.

Why the other options are wrong:

- A, the retromandibular and external jugular veins: are the plexus's normal **downstream** drainage away from the skull. They carry blood out of the head, not into the cranial cavity.
- B, the internal jugular vein: is where the cavernous sinus finally drains through the sigmoid sinus. It is the exit from the sinus, not a communication of the pterygoid plexus with it.
- C, the pharyngeal and vertebral venous plexuses: are valveless and clinically important for the spread of prostatic and pelvic tumours to the vertebrae and skull, but they are not the recognised link between the pterygoid plexus and the cavernous sinus.

Final Answer: Emissary veins passing through the foramen ovale and the sphenoidal emissary foramen $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q14

Answer Key

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