INI CET Anatomy

Sample Paper – 2

Duration: 45 Minutes **Maximum Marks: 50**

Instructions

- This paper contains **50** Multiple Choice Questions (Single Best Response), modelled on the Anatomy content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- Each correct answer carries **+1 mark**. There is **negative marking of one-third (0.33) mark** for every incorrect answer; unattempted questions carry no penalty.
- Every question has **exactly one best answer**. Choose the single most appropriate option.
- INI CET is a computer-based test taken in fixed 50-question blocks of **45 minutes** each; attempt this practice paper in one timed sitting of about **45 minutes**.
- Use of textbooks, mobile phones, and other electronic gadgets is strictly prohibited during the attempt.

Neuroanatomy

Q1. A midbrain lesion that produces an ipsilateral oculomotor (CN III) palsy together with a contralateral spastic hemiplegia is known as:

(A) Wallenberg (lateral medullary) syndrome

(B) Weber syndrome

(C) Benedikt syndrome

(D) Parinaud syndrome

Q2. Occlusion of which artery produces the medial medullary syndrome, with ipsilateral tongue deviation (CN XII), contralateral hemiplegia and contralateral loss of fine touch?

(A) Anterior spinal artery

(B) Posterior inferior cerebellar artery

(C) Superior cerebellar artery

(D) Basilar artery

Q3. Preganglionic parasympathetic fibres responsible for pupillary constriction arise from which nucleus in the midbrain?

(A) Nucleus of the abducens

(B) Substantia nigra

(C) Trochlear nucleus

(D) Edinger-Westphal nucleus

Q4. The lateral rectus muscle, which abducts the eyeball, is supplied by which cranial nerve?

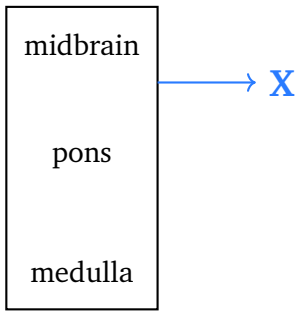
(A) Trochlear nerve (IV)

(B) Oculomotor nerve (III)

(C) Ophthalmic nerve (V_1)

(D) Abducens nerve (VI)

Q5. In the schematic of the brainstem below, the nerve marked **X** emerges from the *dorsal* surface, just below the inferior colliculus, and is the only cranial nerve to do so. It is the:



(dorsal surface faces right)

(A) Abducens nerve (VI)

(B) Trochlear nerve (IV)

(C) Oculomotor nerve (III)

(D) Optic nerve (II)

Q6. About 85% of the fibres of the corticospinal (pyramidal) tract cross the midline at which site?

(A) At the level of the midbrain

(B) At the level of the pons

(C) At the pyramids of the lower medulla

(D) At their level of entry into the spinal cord

Q7. Second-order neurons carrying fine touch, vibration and conscious proprioception ascend from the medulla to the ventral posterolateral (VPL) nucleus of the thalamus as which tract?

(A) Medial lemniscus

(B) Lateral spinothalamic tract

(C) Lateral corticospinal tract

(D) Posterior spinocerebellar tract

Q8. A patient shows ptosis, miosis and anhidrosis over one half of the face (Horner syndrome). This indicates a lesion of which pathway?

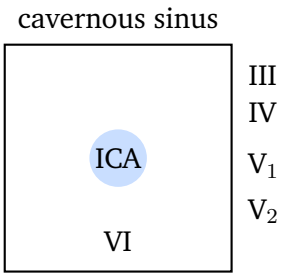
(A) Facial nerve pathway

(B) Sympathetic pathway

(C) Oculomotor nerve

(D) Trigeminal nerve

Q9. The coronal section below shows the cavernous sinus with the internal carotid artery and several cranial nerves. Which of the following does *not* pass through the cavernous sinus?



(A) Abducens nerve

(B) Mandibular nerve (V_3)

(C) Internal carotid artery

(D) Oculomotor nerve

Head and Neck

Q10. Acting from the primary position, the inferior oblique muscle produces which combination of eye movements?

(A) Depression and intorsion

(B) Adduction only

(C) Abduction and depression

(D) Elevation and extorsion

Q11. Which pair of extraocular muscles is supplied by the trochlear nerve (IV) and the abducens nerve (VI) respectively?

(A) Medial rectus and inferior oblique

(B) Superior oblique and lateral rectus

(C) Superior rectus and medial rectus

(D) Inferior rectus and inferior oblique

Q12. Which of the following structures passes through the superior orbital fissure?

(A) Maxillary nerve

(B) Oculomotor nerve

(C) Optic nerve

(D) Middle meningeal artery

Q13. Parasympathetic secretomotor fibres to the lacrimal gland, carried by the greater petrosal nerve, synapse (relay) in which ganglion?

(A) Otic ganglion

(B) Submandibular ganglion

(C) Pterygopalatine ganglion

(D) Ciliary ganglion

Q14. A complete drooping of the upper eyelid, with the eye resting "down and out", points to palsy of the nerve supplying the levator palpebrae superioris. That nerve is the:

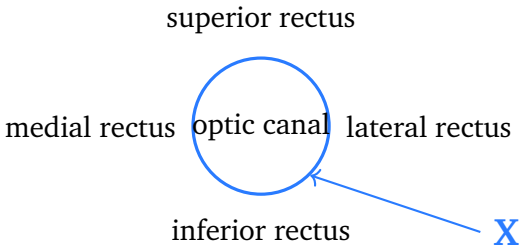
(A) Facial nerve

(B) Trochlear nerve

(C) Oculomotor nerve

(D) Cervical sympathetic supply

Q15. In the diagram of the orbital apex below, the four recti muscles take a common origin from the ring marked **X**. This ring is the:



(A) Common tendinous ring (annulus of Zinn)

(B) Trochlea

(C) Orbital septum

(D) Periorbita

Q16. In an orbital floor ("blow-out") fracture, upward gaze of the affected eye is limited because which muscle becomes entrapped?

(A) Inferior rectus

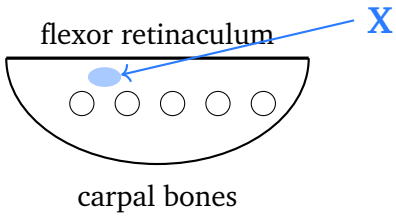
(B) Superior rectus

(C) Lateral rectus

(D) Superior oblique

Upper and Lower Limb

Q17. In the cross-section of the wrist below, the flexor retinaculum roofs the carpal tunnel. The nerve marked **X**, compressed in carpal tunnel syndrome, is the:



(A) Ulnar nerve

(B) Median nerve

(C) Radial nerve

(D) Posterior interosseous nerve

Q18. The recurrent (motor) branch of the median nerve, easily injured by a superficial laceration over the thenar eminence, supplies which muscle group?

(A) The thenar muscles

(B) The hypothenar muscles

(C) All the interossei

(D) The adductor pollicis

Q19. The ulnar nerve enters the hand superficial to the flexor retinaculum, passing between the pisiform and the hook of the hamate, through which canal?

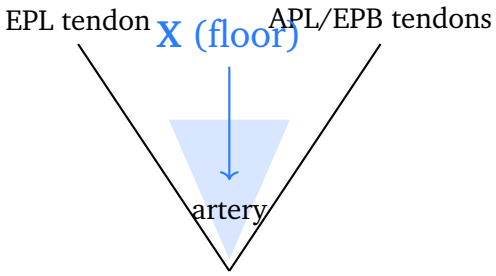
(A) Carpal tunnel

(B) Cubital tunnel

(C) Radial tunnel

(D) Guyon's canal

Q20. In the diagram of the anatomical snuffbox below, structure lying in the floor marked **X** is a pulsating artery, and the bone forming the floor can be tender in a specific fracture. The artery and bone are:



(A) Ulnar artery and lunate

(B) Radial artery and trapezium

(C) Ulnar artery and scaphoid

(D) Radial artery and scaphoid

Q21. The dorsal interossei of the hand perform which action, and are supplied by which nerve?

(A) Adduction of the fingers, ulnar nerve

(B) Abduction of the fingers, ulnar nerve

(C) Abduction of the fingers, median nerve

(D) Flexion of the fingers, median nerve

Q22. The lumbrical muscles of the hand act on the digits to produce:

(A) Extension at the metacarpophalangeal joints and flexion at the interphalangeal joints

(B) Flexion at the metacarpophalangeal joints and extension at the interphalangeal joints

(C) Abduction of the fingers

(D) Adduction of the thumb

Q23. A positive Froment's sign, in which the thumb flexes at the interphalangeal joint while gripping a sheet of paper, indicates weakness of which muscle (and its nerve)?

(A) Adductor pollicis (ulnar nerve)

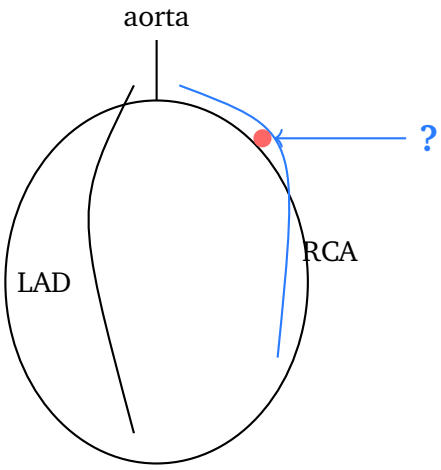
(B) Flexor pollicis longus (median nerve)

(C) Opponens pollicis (median nerve)

(D) Abductor pollicis brevis (median nerve)

Thorax, Abdomen and Pelvis

Q24. In the schematic of the coronary circulation below, the conduction node marked **?** (the sinoatrial node) is supplied, in a right-dominant heart, by which artery?



(A) Right coronary artery

(B) Left anterior descending artery

(C) Left circumflex artery

(D) Left main coronary artery

Q25. The left anterior descending (anterior interventricular) artery chiefly supplies which region of the heart?

(A) The posterior third of the interventricular septum

(B) The right atrium and the sinoatrial node

(C) The anterior interventricular septum and the anterior wall of the left ventricle

(D) The whole of the left atrium

Q26. The coronary sinus, which collects most of the venous blood from the heart wall, opens into which chamber?

(A) Left atrium

(B) Right atrium

(C) Right ventricle

(D) Superior vena cava

Q27. In a right-dominant coronary circulation, the posterior interventricular (posterior descending) artery is a branch of the:

(A) Left anterior descending artery

(B) Left circumflex artery

(C) Left main coronary artery

(D) Right coronary artery

Q28. The aortic valve is best auscultated over which surface area of the chest?

(A) Left 5th intercostal space in the mid-clavicular line

(B) Left 2nd intercostal space, parasternal

(C) Right 2nd intercostal space, parasternal

(D) Left lower sternal border, 4th–5th intercostal space

Q29. The apex beat of a normal adult heart is palpated at which location?

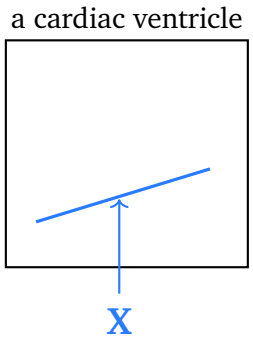
(A) Left 2nd intercostal space

(B) Right 5th intercostal space in the mid-clavicular line

(C) Left 5th intercostal space in the mid-clavicular line

(D) Over the xiphisternum

Q30. The muscular bridge marked **X** in the ventricle below is the moderator band (septomarginal trabecula), which carries part of the right bundle branch. It is found in which chamber?



(A) Right ventricle

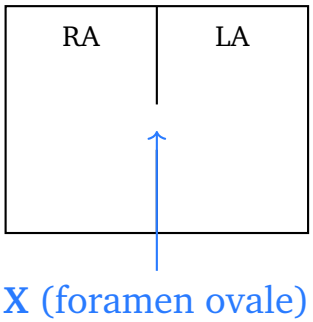
(B) Left ventricle

(C) Right atrium

(D) Left atrium

Embryology

Q31. In the diagram of the developing atrial septum below, the opening **X** is the foramen ovale. An ostium secundum atrial septal defect results from which developmental error?



(A) Persistence of the ostium primum

(B) Failure of the septum transversum

(C) Excessive resorption of the septum primum (or a deficient septum secundum)

(D) Non-fusion of the endocardial cushions

Q32. The commonest type of ventricular septal defect involves which part of the interventricular septum?

(A) Muscular part

(B) Inlet part

(C) Outlet (infundibular) part

(D) Membranous part

Q33. Failure of the aorticopulmonary (spiral) septum to spiral normally as it divides the truncus arteriosus results in which cardiac anomaly?

(A) An isolated ventricular septal defect

(B) An isolated atrial septal defect

(C) Transposition of the great arteries

(D) Coarctation of the aorta

Q34. After birth the ductus venosus obliterates to become which adult structure?

(A) Ligamentum teres hepatis

(B) Medial umbilical ligament

(C) Ligamentum arteriosum

(D) Ligamentum venosum

Q35. The left umbilical vein of the fetus becomes which structure in the adult?

(A) Ligamentum venosum

(B) Ligamentum arteriosum

(C) Ligamentum teres hepatis (round ligament of the liver)

(D) Median umbilical ligament

Q36. After birth the foramen ovale closes and leaves which depression on the interatrial septum?

(A) Fossa ovalis

(B) Coronary sinus

(C) Crista terminalis

(D) Ligamentum arteriosum

Q37. The smooth-walled part (sinus venarum) of the right atrium and the sinoatrial node develop from which embryonic structure?

(A) Primitive atrium

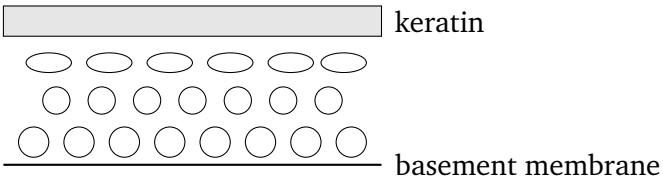
(B) Bulbus cordis

(C) Truncus arteriosus

(D) Sinus venosus

Histology

Q38. The section below shows an epithelium of several cell layers, its deepest cells columnar and its most superficial layer forming a dead, flattened keratin sheet. This epithelium, typical of thick skin, is:



(A) Stratified squamous keratinised epithelium

(B) Simple squamous epithelium

(C) Transitional epithelium

(D) Pseudostratified ciliated columnar epithelium

Q39. Which encapsulated cutaneous receptor, built of concentric onion-like lamellae, detects deep pressure and vibration?

(A) Meissner corpuscle

(B) Pacinian corpuscle

(C) Merkel cell

(D) Ruffini ending

Q40. Which set of features is characteristic of skeletal muscle on light microscopy?

(A) A single central nucleus with no cross-striations

(B) Branching fibres joined by intercalated discs

(C) Multiple peripheral nuclei with prominent cross-striations

(D) Spindle-shaped cells each with one central nucleus

Q41. Which combination correctly describes hyaline cartilage?

(A) Type I collagen, covered by periosteum

(B) Predominantly elastic fibres, with no covering membrane

(C) Type II collagen, covered by a perichondrium

(D) Type IV collagen, covered by synovium

Q42. The eosinophilic (pink-staining) parietal, or oxyntic, cells of the gastric glands secrete:

(A) Pepsinogen

(B) Hydrochloric acid and intrinsic factor

(C) Mucus and bicarbonate

(D) Gastrin

Q43. Pulmonary surfactant is produced by which alveolar cell, recognised histologically by its cytoplasmic lamellar bodies?

(A) Type I pneumocyte

(B) Alveolar macrophage

(C) Clara (club) cell

(D) Type II pneumocyte

Genetics and Cytogenetics

Q44. A neonate presents with rocker-bottom feet, clenched fists with overlapping fingers, a small jaw and a prominent occiput. The most likely cytogenetic diagnosis is:

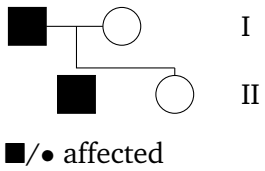
(A) Trisomy 18 (Edwards syndrome)

(B) Trisomy 21 (Down syndrome)

(C) Trisomy 13 (Patau syndrome)

(D) 45,X monosomy (Turner syndrome)

Q45. The pedigree below shows an adult-onset disorder of chorea that appears in every generation, is passed from an affected father to an affected son, and worsens (anticipation) as a CAG repeat expands. The disorder is:



(A) Down syndrome

(B) Turner syndrome

(C) Huntington disease

(D) Duchenne muscular dystrophy

Q46. The single Barr body seen in the somatic cells of a normal female represents:

(A) An X chromosome inactivated by Lyonization

(B) An extra X chromosome gained by non-disjunction

(C) The product of a Robertsonian translocation

(D) An inactivated Y chromosome

Q47. In familial (Robertsonian translocation) Down syndrome, the total chromosome count in the affected child's karyotype is:

(A) 47

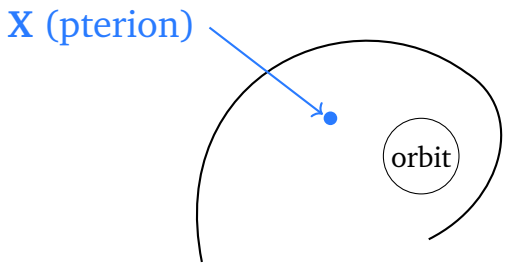
(B) 45

(C) 48

(D) 46

Osteology and Radiological Anatomy

Q48. In the lateral view of the skull below, the point marked **X** (the pterion) is the thinnest part of the lateral skull wall. A fracture here endangers which vessel, whose rupture causes an extradural haematoma?



(A) Anterior branch of the middle meningeal artery

(B) Superior sagittal sinus

(C) Internal carotid artery

(D) Transverse sinus

Q49. The transpyloric plane of Addison, which crosses the pylorus, the neck of the pancreas and the origin of the superior mesenteric artery, lies at which vertebral level?

(A) T12

(B) L1

(C) L3

(D) L4

Q50. Blunting of the costophrenic angle on an erect chest radiograph most typically indicates:

(A) Pneumothorax

(B) Lobar consolidation

(C) Cardiomegaly

(D) Pleural effusion

Detailed Solutions

Q1.

Solution

Concept – midbrain (crus cerebri) syndromes: A lesion of the base of the midbrain catches the oculomotor fibres as they leave and the corticospinal fibres in the crus.

Step 1 – localise the two deficits: The exiting CN III fibres give an ipsilateral oculomotor palsy, while the crus cerebri carries the corticospinal tract that has not yet crossed, so weakness is contralateral.

Step 2 – name the syndrome: This combination of ipsilateral CN III palsy plus contralateral hemiplegia is **Weber syndrome**.

Why the other options are wrong:

- A, Wallenberg: a lateral medullary syndrome, not midbrain.
- C, Benedikt: CN III palsy with contralateral tremor and involuntary movements (tegmental, red nucleus involvement), not a pure hemiplegia.
- D, Parinaud: a dorsal midbrain syndrome with vertical gaze palsy.

Final Answer: Weber syndrome $\Rightarrow$ B

Answer: (B) Go Back to Q1

Q2.

Solution

Concept – medial medullary syndrome: The medial (paramedian) medulla is fed by paramedian branches of the anterior spinal artery and vertebral artery.

Step 1 – list the three structures involved: The hypoglossal nucleus/nerve (CN XII), the pyramid (corticospinal fibres) and the medial lemniscus all lie in the paramedian medulla.

Step 2 – name the artery: Occlusion of the **anterior spinal artery** damages all three, giving ipsilateral tongue deviation, contralateral hemiplegia and contralateral loss of fine touch.

Why the other options are wrong:

- B, PICA: causes the lateral medullary (Wallenberg) syndrome.
- C, Superior cerebellar artery: affects the upper pons and cerebellum.
- D, Basilar artery: a large-territory brainstem stroke, not this focal medial

picture.

Final Answer: Anterior spinal artery $\Rightarrow$ A

Answer: (A) Go Back to Q2

Q3.

Solution

Concept – parasympathetic supply to the eye: The pupillary light reflex uses a parasympathetic outflow that begins in the midbrain.

Step 1 – name the nucleus: Preganglionic parasympathetic fibres arise from the **Edinger-Westphal nucleus**, the visceral part of the oculomotor complex.

Step 2 – trace the pathway: They travel with CN III, relay in the ciliary ganglion, and reach the sphincter pupillae to constrict the pupil.

Why the other options are wrong:

- A, Abducens nucleus: purely somatic motor to the lateral rectus.
- B, Substantia nigra: a basal ganglia motor centre.
- C, Trochlear nucleus: somatic motor to the superior oblique.

Final Answer: Edinger-Westphal nucleus $\Rightarrow$ D

Answer: (D) Go Back to Q3

Q4.

Solution

Concept – innervation of the extraocular muscles: The mnemonic "LR_6 SO_4 AR_3" assigns the muscles to their nerves.

Step 1 – match the lateral rectus: The **abducens nerve (VI)** supplies the lateral rectus, which abducts the eye.

Step 2 – confirm the action: A CN VI palsy therefore causes a convergent squint with failure of abduction.

Why the other options are wrong:

- A, Trochlear (IV): supplies the superior oblique.
- B, Oculomotor (III): supplies the remaining recti and the inferior oblique.
- C, Ophthalmic (V_1): a sensory nerve, not a motor supply to muscles.

Final Answer: Abducens nerve (VI) $\Rightarrow$ D

Answer: (D) Go Back to Q4

Q5.

Solution

Concept – the dorsally-exiting cranial nerve: Almost all cranial nerves leave the ventral (front) surface of the brainstem.

Step 1 – identify the exception: The **trochlear nerve (IV)** is the only cranial nerve to emerge from the dorsal surface, just below the inferior colliculus.

Step 2 – note its other features: It is also the thinnest cranial nerve and the only one to cross before it exits, so it supplies the contralateral superior oblique.

Why the other options are wrong:

- A, Abducens (VI): emerges ventrally at the pontomedullary junction.
- C, Oculomotor (III): emerges from the interpeduncular fossa on the ventral midbrain.
- D, Optic nerve (II): a tract of the forebrain, not a brainstem nerve.

Final Answer: Trochlear nerve (IV) $\Rightarrow$ B

Answer: (B) Go Back to Q5

Q6.

Solution

Concept – the corticospinal (pyramidal) tract: Voluntary motor fibres descend and mostly cross to control the opposite half of the body.

Step 1 – locate the crossing: About 85% of the fibres decussate at the **pyramids of the lower medulla** (the pyramidal decussation), forming the lateral corticospinal tract.

Step 2 – account for the rest: The remaining uncrossed fibres form the anterior corticospinal tract and cross lower down at their segment of termination.

Why the other options are wrong:

- A and B, Midbrain and pons: the tract passes through but does not decussate there.
- D, At entry into the cord: applies only to the small anterior corticospinal

component.

Final Answer: At the pyramids of the lower medulla $\Rightarrow$ C

Answer: (C) Go Back to Q6

Q7.

Solution

Concept – the dorsal column–medial lemniscus pathway: Fine touch and proprioception ascend uncrossed in the dorsal columns, then relay and cross in the medulla.

Step 1 – name the second-order tract: After synapsing in the gracile and cuneate nuclei, the second-order axons cross and ascend as the **medial lemniscus**.

Step 2 – confirm the destination: The medial lemniscus terminates in the VPL nucleus of the thalamus.

Why the other options are wrong:

- B, Lateral spinothalamic tract: carries pain and temperature.
- C, Lateral corticospinal tract: a descending motor pathway.
- D, Posterior spinocerebellar tract: carries unconscious proprioception to the cerebellum.

Final Answer: Medial lemniscus $\Rightarrow$ A

Answer: (A) Go Back to Q7

Q8.

Solution

Concept – Horner syndrome: The triad of ptosis, miosis and anhidrosis reflects loss of sympathetic supply to the head.

Step 1 – link each sign to the sympathetic supply: Sympathetic fibres innervate the superior tarsal (Muller) muscle, the pupillary dilator and the facial sweat glands, so their loss gives partial ptosis, a small pupil and dry skin.

Step 2 – name the affected pathway: The lesion lies in the three-neuron **sympathetic pathway** to the head and neck.

Why the other options are wrong:

- A, Facial nerve: injury gives facial muscle weakness, not this triad.

- C, Oculomotor nerve: causes a complete ptosis with a dilated pupil, the opposite pupillary picture.
- D, Trigeminal nerve: chiefly a sensory loss on the face.

Final Answer: Sympathetic pathway $\Rightarrow$ B

Answer: (B) Go Back to Q8

Q9.

Solution

Concept – contents of the cavernous sinus: The sinus transmits the internal carotid artery and abducens nerve through its centre, and CN III, IV, V_1 and V_2 in its lateral wall.

Step 1 – recall the full list: The nerves related to the cavernous sinus are III, IV, V_1, V_2 and VI, alongside the internal carotid artery.

Step 2 – find the odd one out: The **mandibular nerve (V_3)** leaves the skull through the foramen ovale and does not enter the cavernous sinus.

Why the other options are wrong:

- A, Abducens nerve: runs within the sinus, lateral to the carotid.
- C, Internal carotid artery: passes through the centre of the sinus.
- D, Oculomotor nerve: lies in the lateral wall of the sinus.

Final Answer: Mandibular nerve (V_3) $\Rightarrow$ B

Answer: (B) Go Back to Q9

Q10.

Solution

Concept – actions of the inferior oblique: The obliques approach the eyeball from in front, so their pull differs from the recti.

Step 1 – state the primary action: From the primary position the **inferior oblique elevates** the eye; its secondary actions are abduction and **extorsion**.

Step 2 – clinical test: It is tested by asking the patient to look up and in (elevation of the adducted eye).

Why the other options are wrong:

- A, Depression and intorsion: describes the superior oblique.

- B, Adduction only: describes the medial rectus.
- C, Abduction and depression: is not the oblique action pattern.

Final Answer: Elevation and extorsion $\Rightarrow$ D

Answer: (D) Go Back to Q10

Q11.

Solution

Concept – special nerve supply of two extraocular muscles: Two muscles escape the oculomotor nerve.

Step 1 – assign the nerves: The **superior oblique** is supplied by the trochlear nerve (IV) and the **lateral rectus** by the abducens nerve (VI).

Step 2 – match the option: Only option B pairs superior oblique with lateral rectus.

Why the other options are wrong:

- A, Medial rectus and inferior oblique: both are oculomotor (III).
- C, Superior rectus and medial rectus: both are oculomotor (III).
- D, Inferior rectus and inferior oblique: both are oculomotor (III).

Final Answer: Superior oblique and lateral rectus $\Rightarrow$ B

Answer: (B) Go Back to Q11

Q12.

Solution

Concept – contents of the superior orbital fissure: This fissure links the middle cranial fossa to the orbit and transmits the nerves that move the eye.

Step 1 – list the contents: It transmits CN III, IV, VI, the three branches of V_1 (lacrimal, frontal, nasociliary) and the superior ophthalmic vein.

Step 2 – select the correct option: Of the choices, the **oculomotor nerve** passes through the superior orbital fissure.

Why the other options are wrong:

- A, Maxillary nerve: exits through the foramen rotundum.
- C, Optic nerve: passes through the optic canal, not the fissure.
- D, Middle meningeal artery: enters through the foramen spinosum.

Final Answer: Oculomotor nerve $\Rightarrow$ B

Answer: (B) Go Back to Q12

Q13.

Solution

Concept – lacrimal secretomotor pathway: Tear secretion is driven by parasympathetic fibres that ride with the facial nerve.

Step 1 – trace the fibres: They travel greater petrosal nerve $\rightarrow$ nerve of the pterygoid canal $\rightarrow$ ganglion, then along the zygomatic and lacrimal nerves to the gland.

Step 2 – name the relay: The synapse occurs in the **pterygopalatine ganglion**.

Why the other options are wrong:

- A, Otic ganglion: relays secretomotor fibres to the parotid.
- B, Submandibular ganglion: relays to the submandibular and sublingual glands.
- D, Ciliary ganglion: relays to the sphincter pupillae and ciliary muscle.

Final Answer: Pterygopalatine ganglion $\Rightarrow$ C

Answer: (C) Go Back to Q13

Q14.

Solution

Concept – lifting the upper eyelid: Two muscles raise the lid: the striated levator palpebrae superioris (CN III) and the smooth superior tarsal muscle (sympathetic).

Step 1 – interpret "down and out": Complete ptosis with the eye deviated down and out points to loss of the oculomotor supply to the whole levator, plus paralysis of the other muscles it serves.

Step 2 – name the nerve: The nerve is the **oculomotor nerve (III)**.

Why the other options are wrong:

- A, Facial nerve: closes the eye (orbicularis oculi); its palsy causes inability to close, not ptosis.
- B, Trochlear nerve: supplies only the superior oblique.
- D, Cervical sympathetic supply: loss gives only a mild partial ptosis (Horner),

not a complete one with a down-and-out eye.

Final Answer: Oculomotor nerve ⇒ C

Answer: (C) Go Back to Q14

Q15.

Solution

Concept – common origin of the recti: The four recti share a single fibrous origin at the orbital apex.

Step 1 – identify the ring: The structure marked X is the **common tendinous ring (annulus of Zinn)**, encircling the optic canal and part of the superior orbital fissure.

Step 2 – note what passes through it: Nerves entering within the ring (CN III, VI, nasociliary) supply structures inside the muscle cone.

Why the other options are wrong:

- B, Trochlea: the fibrous pulley for the superior oblique tendon only.
- C, Orbital septum: a sheet in the eyelids, not a muscle origin.
- D, Periorbita: the periosteum lining the orbit, not the tendinous ring.

Final Answer: Common tendinous ring (annulus of Zinn) ⇒ A

Answer: (A) Go Back to Q15

Q16.

Solution

Concept – orbital floor blow-out fracture: A blow to the eye raises orbital pressure and cracks the thin orbital floor, letting tissue herniate into the maxillary sinus.

Step 1 – identify the trapped muscle: The **inferior rectus** (and adjacent fat) is drawn into the fracture.

Step 2 – explain the sign: The tethered inferior rectus cannot let the eye elevate, so upward gaze is limited and the patient sees double.

Why the other options are wrong:

- B, Superior rectus: lies in the roof of the orbit, away from the floor.
- C, Lateral rectus: lies on the lateral wall.

- D, Superior oblique: runs along the medial roof, not the floor.

Final Answer: Inferior rectus ⇒ A

Answer: (A) Go Back to Q16

Q17.

Solution

Concept – the carpal tunnel: The tunnel is roofed by the flexor retinaculum and floored by the carpal bones.

Step 1 – list its contents: It transmits the nine long flexor tendons and one nerve.

Step 2 – name the nerve at X: The nerve lying just deep to the retinaculum, marked X, is the **median nerve**, compressed in carpal tunnel syndrome.

Why the other options are wrong:

- A, Ulnar nerve: passes superficial to the retinaculum, in Guyon's canal.
- C, Radial nerve: ends as sensory branches on the dorsum, not in the tunnel.
- D, Posterior interosseous nerve: lies in the forearm extensor compartment.

Final Answer: Median nerve ⇒ B

Answer: (B) Go Back to Q17

Q18.

Solution

Concept – recurrent branch of the median nerve: This short motor twig loops back over the flexor retinaculum to the base of the thumb.

Step 1 – name its target: It supplies the **thenar muscles** (abductor pollicis brevis, flexor pollicis brevis, opponens pollicis).

Step 2 – clinical note: A cut over the thenar eminence can paralyse opposition of the thumb ("ape hand").

Why the other options are wrong:

- B, Hypothenar muscles: supplied by the ulnar nerve.
- C, All the interossei: supplied by the ulnar nerve.
- D, Adductor pollicis: supplied by the ulnar nerve, not the median.

Final Answer: The thenar muscles ⇒ A

Answer: (A) Go Back to Q18

Q19.

Solution

Concept – the ulnar tunnel at the wrist: The ulnar nerve and artery cross the wrist superficial to the flexor retinaculum.

Step 1 – name the passage: They run through **Guyon's canal**, bounded by the pisiform, the hook of the hamate and the pisohamate ligament.

Step 2 – clinical note: Compression here (e.g. cyclist's palsy) weakens the small muscles of the hand while sparing forearm ulnar function.

Why the other options are wrong:

- A, Carpal tunnel: transmits the median nerve, deep to the retinaculum.
- B, Cubital tunnel: the ulnar nerve's passage behind the medial epicondyle at the elbow.
- C, Radial tunnel: a site of radial nerve compression in the proximal forearm.

Final Answer: Guyon's canal $\Rightarrow$ D

Answer: (D) Go Back to Q19

Q20.

Solution

Concept – the anatomical snuffbox: This triangular hollow is bounded by the extensor pollicis longus behind and the abductor pollicis longus and extensor pollicis brevis in front.

Step 1 – name the artery in the floor: The **radial artery** crosses the floor of the snuffbox as it passes to the palm.

Step 2 – name the bone: The **scaphoid** (with the trapezium) forms the floor; tenderness here suggests a scaphoid fracture.

Why the other options are wrong:

- A, Ulnar artery and lunate: the ulnar artery lies on the medial side of the wrist.
- B, Radial artery and trapezium: the trapezium is distal; the scaphoid is the classically tender bone.
- C, Ulnar artery and scaphoid: the artery in the floor is radial, not ulnar.

Final Answer: Radial artery and scaphoid ⇒ D

Answer: (D) Go Back to Q20

Q21.

Solution

Concept – interossei of the hand: The mnemonic "DAB and PAD" summarises their actions: Dorsal ABduct, Palmar ADduct.

Step 1 – state the action: The dorsal interossei **abduct** the fingers away from the middle finger.

Step 2 – name the nerve: All interossei, dorsal and palmar, are supplied by the deep branch of the **ulnar nerve**.

Why the other options are wrong:

- A, Adduction: that is the action of the palmar interossei.
- C, Median nerve: does not supply the dorsal interossei.
- D, Flexion by the median nerve: neither the action nor the nerve is correct.

Final Answer: Abduction of the fingers, ulnar nerve ⇒ B

Answer: (B) Go Back to Q21

Q22.

Solution

Concept – the lumbricals: These small muscles pass from the flexor digitorum profundus tendons to the extensor expansions.

Step 1 – work out the action: Because they lie in front of the MCP joints and behind the IP joints, they **flex the metacarpophalangeal joints and extend the interphalangeal joints**.

Step 2 – functional note: This is the writing ("lumbrical") position of the hand.

Why the other options are wrong:

- A, The reverse (extend MCP, flex IP): describes the opposite deforming pull.
- C, Abduction of the fingers: is the dorsal interossei.
- D, Adduction of the thumb: is the adductor pollicis.

Final Answer: Flexion at the MCP and extension at the IP joints ⇒ B

Answer: (B) Go Back to Q22

Q23.

Solution

Concept – Froment's sign: This bedside test detects an ulnar-nerve weakness of thumb adduction.

Step 1 – reason out the sign: When the paralysed **adductor pollicis** cannot hold the paper, the patient substitutes the median-supplied flexor pollicis longus, flexing the thumb IP joint.

Step 2 – name the nerve: The adductor pollicis is supplied by the deep branch of the **ulnar nerve**, so a positive sign indicates ulnar palsy.

Why the other options are wrong:

- B, Flexor pollicis longus: it is the compensating muscle, not the weak one.
- C, Opponens pollicis: a median-supplied thenar muscle, not tested here.
- D, Abductor pollicis brevis: a median-supplied thenar muscle, unrelated to this sign.

Final Answer: Adductor pollicis (ulnar nerve) $\Rightarrow$ A

Answer: (A) Go Back to Q23

Q24.

Solution

Concept – blood supply of the conducting system: The sinoatrial and atrioventricular nodes depend on a single dominant artery in most hearts.

Step 1 – recall the dominance rule: In the roughly 85% of hearts that are right-dominant, the **right coronary artery** gives the SA nodal and AV nodal branches.

Step 2 – read the figure: The node marked in the diagram sits high on the right side, supplied by the RCA.

Why the other options are wrong:

- B, LAD: supplies the anterior septum, not the nodes.
- C, Left circumflex: supplies the nodes only in the minority of left-dominant hearts.
- D, Left main: is the short common stem before it divides, not a nodal supply itself.

Final Answer: Right coronary artery ⇒ A

Answer: (A) Go Back to Q24

Q25.

Solution

Concept – territory of the LAD: The left anterior descending artery runs in the anterior interventricular groove.

Step 1 – map its supply: It supplies the **anterior two-thirds of the interventricular septum and the anterior wall of the left ventricle**, plus much of the apex.

Step 2 – clinical note: Because of this wide territory it is called the "widow-maker" when occluded.

Why the other options are wrong:

- A, Posterior third of the septum: supplied by the posterior interventricular artery.
- B, Right atrium and SA node: usually a right coronary territory.
- D, The whole left atrium: mostly a circumflex territory.

Final Answer: Anterior septum and anterior LV wall ⇒ C

Answer: (C) Go Back to Q25

Q26.

Solution

Concept – venous drainage of the heart: Most cardiac veins converge on a single large channel in the coronary groove.

Step 1 – follow the coronary sinus: The coronary sinus lies in the posterior atrioventricular groove and opens into the **right atrium**, between the IVC opening and the tricuspid orifice.

Step 2 – confirm: Its opening is guarded by the thebesian valve.

Why the other options are wrong:

- A, Left atrium: receives the pulmonary veins, not the coronary sinus.
- C, Right ventricle: receives blood from the right atrium, not directly from the sinus.

- D, Superior vena cava: is a systemic vein draining into the right atrium separately.

Final Answer: Right atrium $\Rightarrow$ B

Answer: (B) Go Back to Q26

Q27.

Solution

Concept – the posterior interventricular artery: Coronary dominance is defined by the origin of this artery.

Step 1 – apply the definition: In a right-dominant circulation the posterior interventricular (descending) artery arises from the **right coronary artery**.

Step 2 – note its supply: It supplies the posterior third of the septum and the inferior wall of the left ventricle.

Why the other options are wrong:

- A, LAD: runs in the anterior groove, a separate branch.
- B, Left circumflex: gives the posterior descending only in left-dominant hearts.
- C, Left main: divides into the LAD and circumflex and does not itself become the PDA.

Final Answer: Right coronary artery $\Rightarrow$ D

Answer: (D) Go Back to Q27

Q28.

Solution

Concept – valve auscultation areas: Each valve is heard best where its sound is carried by blood flow, not over its anatomical site.

Step 1 – locate the aortic area: The aortic valve is best heard in the **right 2nd intercostal space, just lateral to the sternum**.

Step 2 – confirm by contrast: The pulmonary area is the mirror site on the left, and the mitral area is at the apex.

Why the other options are wrong:

- A, Left 5th space mid-clavicular: the mitral (apex) area.

- B, Left 2nd space parasternal: the pulmonary area.
- D, Left lower sternal border: the tricuspid area.

Final Answer: Right 2nd intercostal space, parasternal $\Rightarrow$ C

Answer: (C) Go Back to Q28

Q29.

Solution

Concept – surface marking of the apex beat: The apex is the lowest, most lateral point of the heart, formed by the left ventricle.

Step 1 – give the landmark: The apex beat is normally felt in the **left 5th intercostal space in the mid-clavicular line**.

Step 2 – clinical use: Displacement of this point suggests cardiac enlargement or a shifted mediastinum.

Why the other options are wrong:

- A, Left 2nd space: too high, over the great vessels.
- B, Right 5th space: the heart apex points to the left, not the right.
- D, Xiphisternum: a midline point, not the apex.

Final Answer: Left 5th intercostal space, mid-clavicular line $\Rightarrow$ C

Answer: (C) Go Back to Q29

Q30.

Solution

Concept – the moderator band: This muscular bridge crosses the cavity of a ventricle carrying conducting tissue.

Step 1 – locate it: The moderator band (septomarginal trabecula) runs from the interventricular septum to the anterior papillary muscle of the **right ventricle**.

Step 2 – state its function: It carries part of the right bundle branch, speeding conduction to the papillary muscle.

Why the other options are wrong:

- B, Left ventricle: has no moderator band.
- C, Right atrium: contains pectinate muscles, not the moderator band.
- D, Left atrium: has a smooth wall over most of its extent.

Final Answer: Right ventricle $\Rightarrow$ A

Answer: (A) Go Back to Q30

Q31.

Solution

Concept – development of the atrial septum: Two overlapping septa (primum and secundum) leave the foramen ovale as a valved gap.

Step 1 – form the normal ostium secundum: As the septum primum grows down, its upper part breaks down to form the ostium secundum, which the septum secundum then overlaps.

Step 2 – explain the defect: An ostium secundum ASD results from **excessive resorption of the septum primum** (or a deficient septum secundum), leaving a hole in the region of the fossa ovalis.

Why the other options are wrong:

- A, Persistence of the ostium primum: gives a different, lower ostium primum defect.
- B, Failure of the septum transversum: relates to the diaphragm, not the atrial septum.
- D, Non-fusion of the endocardial cushions: produces atrioventricular canal (ostium primum/AV) defects.

Final Answer: Excessive resorption of the septum primum $\Rightarrow$ C

Answer: (C) Go Back to Q31

Q32.

Solution

Concept – ventricular septal defects: The interventricular septum has a large muscular part and a small membranous part.

Step 1 – name the commonest site: Most VSDs occur in the **membranous part**, the last region of the septum to close.

Step 2 – reason why: Its closure depends on tissue from the endocardial cushions and the muscular septum meeting, so it is prone to failure.

Why the other options are wrong:

- A, Muscular part: defects here occur but are less common.
- B, Inlet part: an uncommon AV-canal-type location.
- C, Outlet (infundibular) part: seen in specific lesions such as tetralogy of Fallot, not the commonest overall.

Final Answer: Membranous part ⇒ D

Answer: (D) Go Back to Q32

Q33.

Solution

Concept – the aorticopulmonary (spiral) septum: Neural crest cells form a spiralling septum that divides the truncus arteriosus into aorta and pulmonary trunk.

Step 1 – effect of failed spiralling: If the septum runs straight instead of spiralling, the aorta connects to the right ventricle and the pulmonary trunk to the left, giving **transposition of the great arteries**.

Step 2 – related note: Unequal partitioning by the same septum underlies tetralogy of Fallot.

Why the other options are wrong:

- A, Isolated VSD: is a septal, not an outflow-rotation, defect.
- B, Isolated ASD: is an atrial septation defect.
- D, Coarctation of the aorta: is a narrowing of the aortic arch, unrelated to the spiral septum.

Final Answer: Transposition of the great arteries ⇒ C

Answer: (C) Go Back to Q33

Q34.

Solution

Concept – fetal shunts and their remnants: The ductus venosus shunts oxygenated blood past the liver to the IVC.

Step 1 – state its fate: After birth it closes and becomes the **ligamentum venosum**, in a fissure on the visceral surface of the liver.

Step 2 – keep the remnants apart: This is distinct from the umbilical vein remnant (ligamentum teres).

Why the other options are wrong:

- A, Ligamentum teres hepatis: is the remnant of the umbilical vein.
- B, Medial umbilical ligament: is the remnant of the umbilical artery.
- C, Ligamentum arteriosum: is the remnant of the ductus arteriosus.

Final Answer: Ligamentum venosum $\Rightarrow$ D

Answer: (D) Go Back to Q34

Q35.

Solution

Concept – fate of the umbilical vein: The single left umbilical vein carries oxygenated blood from the placenta to the fetus.

Step 1 – state its adult remnant: It obliterates to form the **ligamentum teres hepatis** (round ligament of the liver), running in the free edge of the falciform ligament.

Step 2 – keep it distinct: The ductus venosus, a separate shunt, becomes the ligamentum venosum.

Why the other options are wrong:

- A, Ligamentum venosum: is the ductus venosus remnant.
- B, Ligamentum arteriosum: is the ductus arteriosus remnant.
- D, Median umbilical ligament: is the remnant of the urachus.

Final Answer: Ligamentum teres hepatis $\Rightarrow$ C

Answer: (C) Go Back to Q35

Q36.

Solution

Concept – postnatal closure of the foramen ovale: Rising left atrial pressure after birth presses the septum primum against the septum secundum.

Step 1 – name the adult remnant: The closed foramen ovale leaves the **fossa ovalis**, a shallow depression on the right side of the interatrial septum.

Step 2 – note its rim: Its raised margin is the limbus fossae ovalis (the free edge of the septum secundum).

Why the other options are wrong:

- B, Coronary sinus: a venous channel, unrelated to the foramen ovale.
- C, Crista terminalis: the ridge between the smooth and rough parts of the right atrium.
- D, Ligamentum arteriosum: the ductus arteriosus remnant.

Final Answer: Fossa ovalis $\Rightarrow$ A

Answer: (A) Go Back to Q36

Q37.

Solution

Concept – origins of the right atrium: The right atrium has a rough part (from the primitive atrium) and a smooth part (from an absorbed venous structure).

Step 1 – name the smooth-part origin: The smooth sinus venarum and the sinoatrial node develop from the **sinus venosus**, which is incorporated into the atrial wall.

Step 2 – mark the boundary: The crista terminalis externally (sulcus terminalis) separates the two parts.

Why the other options are wrong:

- A, Primitive atrium: forms the rough, pectinate (auricular) part.
- B, Bulbus cordis: forms the outflow tracts of the ventricles.
- C, Truncus arteriosus: forms the proximal aorta and pulmonary trunk.

Final Answer: Sinus venosus $\Rightarrow$ D

Answer: (D) Go Back to Q37

Q38.

Solution

Concept – reading a skin epithelium: Thick skin is covered by a many-layered epithelium topped with dead keratin.

Step 1 – classify it: Because it has many layers and a flattened, keratinised surface, it is **stratified squamous keratinised epithelium**.

Step 2 – match the figure: The diagram shows a basal columnar layer, spinous and granular layers, and a surface keratin sheet, exactly this arrangement.

Why the other options are wrong:

- B, Simple squamous: is a single flat layer, as in endothelium.
- C, Transitional: has dome-shaped surface cells and lines the urinary tract, with no keratin.
- D, Pseudostratified ciliated columnar: is a single layer that looks multilayered, lining the airway.

Final Answer: Stratified squamous keratinised epithelium ⇒ A

Answer: (A) Go Back to Q38

Q39.

Solution

Concept – cutaneous mechanoreceptors: Different encapsulated endings detect different stimuli.

Step 1 – identify the lamellated receptor: The **Pacinian corpuscle**, built of concentric onion-like lamellae, sits deep in the dermis and detects deep pressure and vibration.

Step 2 – note its adaptation: It is rapidly adapting, responding to changes in pressure rather than sustained touch.

Why the other options are wrong:

- A, Meissner corpuscle: senses light (discriminative) touch in dermal papillae.
- C, Merkel cell: senses sustained light touch and pressure.
- D, Ruffini ending: senses skin stretch.

Final Answer: Pacinian corpuscle ⇒ B

Answer: (B) Go Back to Q39

Q40.

Solution

Concept – distinguishing muscle types: Skeletal, cardiac and smooth muscle each have a characteristic nucleus and striation pattern.

Step 1 – list skeletal features: Skeletal muscle fibres are long, unbranched, show **cross-striations** and have **multiple nuclei pushed to the periphery**.

Step 2 – contrast with the others: Cardiac muscle branches and has central

nuclei with intercalated discs; smooth muscle has a single central nucleus and no striations.

Why the other options are wrong:

- A, Central single nucleus, no striations: describes smooth muscle.
- B, Branching fibres with intercalated discs: describes cardiac muscle.
- D, Spindle cells with a central nucleus: describes smooth muscle.

Final Answer: Peripheral multiple nuclei with cross-striations $\Rightarrow$ C

Answer: (C) Go Back to Q40

Q41.

Solution

Concept – hyaline cartilage: It is the commonest cartilage, forming articular surfaces, costal cartilage and the fetal skeleton.

Step 1 – name the collagen: Its matrix is rich in **type II collagen**, giving a glassy, uniform appearance.

Step 2 – name the covering: It is surrounded (except at joint surfaces) by a **perichondrium** from which it grows by apposition.

Why the other options are wrong:

- A, Type I collagen with periosteum: describes bone, not cartilage.
- B, Elastic fibres with no covering: describes elastic cartilage, which does have a perichondrium.
- D, Type IV collagen with synovium: type IV collagen belongs to basement membranes.

Final Answer: Type II collagen, covered by a perichondrium $\Rightarrow$ C

Answer: (C) Go Back to Q41

Q42.

Solution

Concept – cells of the gastric glands: Each cell type of the gastric mucosa has a distinct secretion and staining.

Step 1 – identify the parietal cell: The eosinophilic **parietal (oxyntic) cell** secretes **hydrochloric acid and intrinsic factor**.

Step 2 – clinical link: Loss of intrinsic factor (as in autoimmune gastritis) causes pernicious anaemia.

Why the other options are wrong:

- A, Pepsinogen: secreted by the basophilic chief (zymogenic) cells.
- C, Mucus and bicarbonate: secreted by mucous neck and surface cells.
- D, Gastrin: secreted by the G (enteroendocrine) cells.

Final Answer: Hydrochloric acid and intrinsic factor $\Rightarrow$ B

Answer: (B) Go Back to Q42

Q43.

Solution

Concept – the alveolar lining cells: The alveolus is lined by two cell types with very different roles.

Step 1 – identify the surfactant cell: The rounded **type II pneumocyte** secretes surfactant and is recognised by its cytoplasmic lamellar bodies.

Step 2 – state its function: Surfactant lowers surface tension and prevents alveolar collapse; type II cells also act as stem cells for repair.

Why the other options are wrong:

- A, Type I pneumocyte: a thin cell for gas exchange, not surfactant production.
- B, Alveolar macrophage: a phagocyte (dust cell), not a surfactant source.
- C, Clara (club) cell: secretes a protective glycoprotein in the bronchioles, not alveolar surfactant.

Final Answer: Type II pneumocyte $\Rightarrow$ D

Answer: (D) Go Back to Q43

Q44.

Solution

Concept – recognising the autosomal trisomies: Each trisomy has a distinctive pattern of malformations.

Step 1 – match the features: Rocker-bottom feet, overlapping clenched fingers, micrognathia and a prominent occiput are classic of **trisomy 18 (Edwards syn-**

drome).

Step 2 – prognosis note: Most affected infants die within the first year of life.

Why the other options are wrong:

- B, Trisomy 21: shows a flat face, upslanting palpebral fissures and a single palmar crease.
- C, Trisomy 13: shows midline defects such as cleft lip/palate, holoprosencephaly and polydactyly.
- D, 45,X: is Turner syndrome, with short stature and a webbed neck, not these features.

Final Answer: Trisomy 18 (Edwards syndrome) $\Rightarrow$ A

Answer: (A) Go Back to Q44

Q45.

Solution

Concept – reading an autosomal dominant pedigree: Autosomal dominant traits appear in every generation and can pass from father to son.

Step 1 – interpret the clues: Chorea of adult onset, male-to-male transmission, appearance in each generation, and worsening with a CAG expansion (anticipation) all point to **Huntington disease**.

Step 2 – confirm the mechanism: Expansion of the CAG trinucleotide repeat in the HTT gene explains the earlier, more severe disease in later generations.

Why the other options are wrong:

- A, Down syndrome: a chromosomal trisomy, not a single-gene dominant trait.
- B, Turner syndrome: a sex-chromosome monosomy, not inherited in this pattern.
- D, Duchenne muscular dystrophy: X-linked recessive, with no male-to-male transmission.

Final Answer: Huntington disease $\Rightarrow$ C

Answer: (C) Go Back to Q45

Q46.

Solution

Concept – the Barr body: Female cells silence one X chromosome to balance gene dosage with males.

Step 1 – name the process: The condensed, inactive X seen as a Barr body is produced by **Lyonization (X-inactivation)**.

Step 2 – state the rule: The number of Barr bodies equals the number of X chromosomes minus one, so a normal female (46,XX) shows one.

Why the other options are wrong:

- B, An extra X from non-disjunction: describes an abnormal karyotype, not the normal single Barr body.
- C, A Robertsonian translocation: involves fusion of acrocentric autosomes, not the X.
- D, An inactivated Y: the Y is not condensed into a Barr body.

Final Answer: An X chromosome inactivated by Lyonization $\Rightarrow$ $\boxed{\text{A}}$

Answer: (A) Go Back to Q46

Q47.

Solution

Concept – translocation Down syndrome: In this familial form an extra chromosome 21 is fused onto another acrocentric chromosome (often 14).

Step 1 – count the chromosomes: Because the extra 21 is attached to another chromosome rather than lying free, the total count is **46**, not 47.

Step 2 – clinical note: The child still has three copies of chromosome 21 material, so the phenotype is Down syndrome; a parent may be a balanced carrier.

Why the other options are wrong:

- A, 47: is the count in the common free trisomy 21, not the translocation form.
- B, 45: would be a monosomy, not Down syndrome.
- C, 48: implies two extra chromosomes, which is not the case here.

Final Answer: 46 $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q47

Q48.

Solution

Concept – the pterion: The pterion is an H-shaped meeting of the frontal, parietal, sphenoid and temporal bones on the side of the skull.

Step 1 – note its danger: It is the thinnest part of the lateral skull and overlies the **anterior branch of the middle meningeal artery**.

Step 2 – clinical link: A fracture here can tear that artery, producing an extradural (epidural) haematoma with a lucid interval.

Why the other options are wrong:

- B, Superior sagittal sinus: lies in the midline, not at the pterion.
- C, Internal carotid artery: runs at the skull base, not under the pterion.
- D, Transverse sinus: lies in the posterior cranial fossa.

Final Answer: Anterior branch of the middle meningeal artery $\Rightarrow$ $\boxed{A}$

Answer: (A) Go Back to Q48

Q49.

Solution

Concept – the transpyloric plane of Addison: This horizontal plane lies midway between the jugular notch and the pubic symphysis.

Step 1 – give the level: It lies at the level of the **first lumbar vertebra (L1)**.

Step 2 – list its structures: It passes through the pylorus, the neck of the pancreas, the origin of the superior mesenteric artery, the hila of the kidneys and the fundus of the gallbladder.

Why the other options are wrong:

- A, T12: too high; the coeliac trunk arises near this level.
- C, L3: the level of the subcostal plane and the origin of the inferior mesenteric artery.
- D, L4: the level of the supracristal plane and the aortic bifurcation.

Final Answer: L1 $\Rightarrow$ $\boxed{B}$

Answer: (B) Go Back to Q49

Q50.

Solution

Concept – the costophrenic angle: On an erect chest film the sharp angle between the diaphragm and the ribs is normally clear.

Step 1 – interpret blunting: Fluid collecting in the pleural space fills this dependent recess first, so blunting of the costophrenic angle signals a **pleural effusion**.

Step 2 – note the threshold: About 200–300 mL of fluid is needed before the angle blunts on a standard PA film.

Why the other options are wrong:

- A, Pneumothorax: shows a lucent area with a visible lung edge, not a blunted angle.
- B, Lobar consolidation: shows patchy or lobar opacity with air bronchograms.
- C, Cardiomegaly: enlarges the cardiac silhouette, not the costophrenic angle.

Final Answer: Pleural effusion $\Rightarrow$ $\boxed{\text{D}}$

Answer: (D) Go Back to Q50

Answer Key

Q	Ans	Q	Ans	Q	Ans	Q	Ans	Q	Ans
1	B	2	A	3	D	4	D	5	B
6	C	7	A	8	B	9	B	10	D
11	B	12	B	13	C	14	C	15	A
16	A	17	B	18	A	19	D	20	D
21	B	22	B	23	A	24	A	25	C
26	B	27	D	28	C	29	C	30	A
31	C	32	D	33	C	34	D	35	C
36	A	37	D	38	A	39	B	40	C
41	C	42	B	43	D	44	A	45	C
46	A	47	D	48	A	49	B	50	D