

# INI CET Ophthalmology

## Sample Paper – 10

Duration: 14 Minutes

Maximum Marks: 15

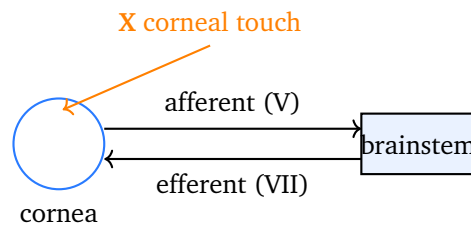
### Instructions

- This paper contains **15** Multiple Choice Questions (Single Best Response), modelled on the Ophthalmology content of **INI CET** (Institutes of National Importance Combined Entrance Test) conducted by AIIMS New Delhi.
- The **15-question** length matches the number of Ophthalmology items you actually meet in the real 200-question paper.
- 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.
- Attempt this practice paper in one timed sitting of about **14 minutes**, the pace the real computer-based test demands.

### Cornea, Conjunctiva and Anterior Segment

- Q1.** A child with stigmata of congenital syphilis presents with photophobia, watering and deep stromal corneal vascularisation that gives a pink 'salmon patch' appearance, later leaving ghost vessels. The diagnosis is:
- (A) Trachoma  
(B) Fungal keratitis  
(C) Interstitial keratitis  
(D) Episcleritis
- Q2.** In the corneal (blink) reflex shown below, lightly touching the cornea at **X** triggers bilateral blinking through a two-neuron arc. The afferent and efferent limbs of this arc are carried, respectively, by:





- (A) The optic nerve (II, afferent) and the oculomotor nerve (III, efferent)
- (B) The facial nerve (VII, afferent) and the trigeminal nerve (V, efferent)
- (C) The trigeminal nerve (V, afferent) and the facial nerve (VII, efferent)
- (D) The trigeminal nerve (V, afferent) and the oculomotor nerve (III, efferent)

**Q3.** An elderly outdoor labourer with decades of ultraviolet exposure has a fleshy, gelatinous, vascularised lesion at the limbus in the interpalpebral zone that has slowly enlarged over months. The most likely diagnosis is:

- (A) Ocular surface squamous neoplasia (conjunctival squamous cell carcinoma)
- (B) Simple pinguecula
- (C) Allergic conjunctivitis
- (D) Subconjunctival haemorrhage

### Lens and Glaucoma

**Q4.** An elderly patient with a grade 3 nuclear sclerotic cataract reports that he can suddenly read small print again without his reading glasses. This temporary 'second sight' is explained by:

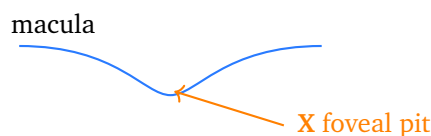
- (A) A myopic shift (index myopia) from the rising refractive index of the sclerotic lens nucleus
- (B) A hypermetropic shift from flattening of the lens
- (C) Steepening of the cornea
- (D) A posterior vitreous detachment



- Q5.** In the standard classification of glaucoma, an eye with raised intraocular pressure caused by a fibrovascular membrane obstructing an anatomically open drainage angle after diabetic retinopathy is best classified as:
- (A) Primary open-angle glaucoma
  - (B) Secondary open-angle glaucoma
  - (C) Primary angle-closure glaucoma
  - (D) Congenital (developmental) glaucoma
- Q6.** A hypermetropic patient with shallow anterior chambers and narrow drainage angles is at risk of acute angle closure. Which of the following systemic drugs should be AVOIDED because it can precipitate an attack?
- (A) Oral acetazolamide
  - (B) Topical pilocarpine
  - (C) Oral propranolol
  - (D) A systemic anticholinergic such as oral atropine or hyoscine

### Retina and Vitreous

- Q7.** The retinal cross-section below shows a central depression (marked X) that is avascular, has the highest density of cones and a near one-to-one cone-to-ganglion-cell link, giving the sharpest central acuity. This region is the:



- (A) Fovea centralis
  - (B) Optic disc
  - (C) Ora serrata
  - (D) Peripheral nasal retina
- Q8.** A young adult with sickle cell disease develops peripheral retinal ischaemia with fronds of 'sea-fan' neovascularisation at the junction of perfused and non-perfused retina. This describes:

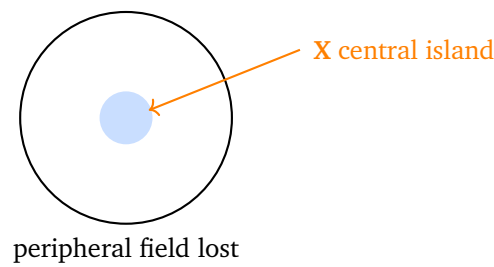


- (A) Central serous retinopathy
- (B) Proliferative sickle cell retinopathy
- (C) Age-related macular degeneration
- (D) Hypertensive retinopathy

### Neuro-ophthalmology and Optics

- Q9.** By the common definition, 'legal blindness' refers to a best-corrected visual acuity in the better eye of 6/60 or worse, or a visual field constricted to 20 degrees or less. A person meeting this criterion can often still be helped by:
- (A) No intervention, as nothing more can be done
  - (B) Only a corneal graft
  - (C) Only cataract surgery
  - (D) Low-vision aids such as magnifiers, telescopes and high-plus reading additions
- Q10.** A patient has a large difference in refractive power between the two eyes (anisometropia). Correcting it with thick spectacle lenses creates a troublesome difference in retinal image size (aniseikonia). The optical correction that best minimises this aniseikonia is:
- (A) Even stronger spectacle lenses
  - (B) Bifocal spectacles
  - (C) Occlusion of one eye
  - (D) Contact lenses (or refractive surgery)
- Q11.** The visual-field schematic below shows severe peripheral constriction with only a small preserved central island (marked X), that is, 'tunnel vision'. A classic cause of this field pattern is:





- (A) Acute angle-closure glaucoma
- (B) Retinitis pigmentosa
- (C) Central retinal artery occlusion
- (D) Optic neuritis

### Uvea, Orbit and Ocular Adnexa

- Q12.** A young man with chronic inflammatory low-back pain and stiffness (ankylosing spondylitis) develops a recurrent painful red photophobic eye with a small pupil. The systemic marker most strongly associated with his acute anterior uveitis is:
- (A) HLA-DR3
  - (B) HLA-B27
  - (C) The RB1 gene
  - (D) The BRCA1 gene
- Q13.** A 6-year-old develops rapidly progressive unilateral proptosis over a few weeks with downward and outward displacement of the globe. The commonest primary orbital malignancy of childhood causing this picture is:
- (A) Rhabdomyosarcoma
  - (B) Retinoblastoma
  - (C) Orbital cellulitis
  - (D) Chalazion

### Paediatric Ophthalmology and Emergencies



- Q14.** A child presents with leukocoria (a white pupillary reflex). Which of the following causes is typically seen in a boy, shows retinal telangiectasia with yellowish subretinal exudate, and is NOT associated with intraocular calcification?
- (A) A simple refractive error
  - (B) Bacterial conjunctivitis
  - (C) Coats disease
  - (D) A sty (external hordeolum)
- Q15.** A patient sustains a penetrating injury with a suspected ruptured (open) globe. The correct immediate management is:
- (A) Firmly pad and bandage the eye with pressure to stop bleeding
  - (B) Irrigate copiously and remove any protruding tissue
  - (C) Apply a rigid protective shield with no pressure, keep the patient nil by mouth and arrange urgent surgical repair
  - (D) Instil steroid drops and discharge with review next day



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

**Concept – interstitial keratitis:** Interstitial keratitis is a non-suppurative inflammation of the corneal stroma, classically linked to congenital syphilis.

**Step 1 – read the clues:** Congenital syphilis, deep stromal vascularisation and a pink 'salmon patch' appearance point to **interstitial keratitis**.

**Step 2 – the natural history:** The active vessels later become non-perfused 'ghost vessels' in the deep stroma, a lasting sign of past disease.

**Why the other options are wrong:**

- A, trachoma: is a chlamydial conjunctival disease, not a syphilitic stromal keratitis.
- B, fungal keratitis: is a suppurative infective ulcer with a feathery infiltrate, not a salmon patch.
- D, episcleritis: is a benign superficial inflammation without stromal vessels.

**Final Answer:** Interstitial keratitis ⇒ C

**Answer: (C)** [Go Back to Q1](#)

**Q2.****Solution**

**Concept – the corneal reflex arc:** The blink reflex has a sensory (afferent) limb and a motor (efferent) limb that meet in the brainstem.

**Step 1 – the afferent limb:** Corneal touch is sensed by the **trigeminal nerve (V)**, through its ophthalmic (V1) division and the nasociliary nerve.

**Step 2 – the efferent limb:** The signal relays in the brainstem to the **facial nerve (VII)**, which fires the orbicularis oculi to close both eyes (a consensual response).

**Why the other options are wrong:**

- A, optic and oculomotor: describes the light reflex pathway, not the corneal reflex.
- B, facial afferent with trigeminal efferent: reverses the two limbs.
- D, trigeminal with oculomotor efferent: the oculomotor nerve does not close the lids; VII does.



**Final Answer:** Trigeminal (V) afferent, facial (VII) efferent  $\Rightarrow$  C

**Answer:** (C) [Go Back to Q2](#)

Q3.

### Solution

**Concept – ocular surface squamous neoplasia (OSSN):** Chronic ultraviolet light drives dysplastic change in the limbal conjunctival epithelium.

**Step 1 – read the clues:** A slowly enlarging, fleshy, gelatinous, vascularised limbal lesion in the interpalpebral zone of a sun-exposed elderly worker is **ocular surface squamous neoplasia** (conjunctival squamous cell carcinoma and its precursors).

**Step 2 – why the site matters:** The interpalpebral limbus receives the most ultraviolet light, which is why OSSN and pterygia both arise there.

**Why the other options are wrong:**

- B, pinguecula: is a small stationary yellow degeneration that does not grow into a fleshy mass.
- C, allergic conjunctivitis: causes itching and papillae, not a solid limbal lesion.
- D, subconjunctival haemorrhage: is a flat red patch that clears in days.

**Final Answer:** Ocular surface squamous neoplasia  $\Rightarrow$  A

**Answer:** (A) [Go Back to Q3](#)

Q4.

### Solution

**Concept – nuclear sclerosis and second sight:** A hardening lens nucleus changes the refractive power of the eye before it becomes opaque.

**Step 1 – name the mechanism:** The rising refractive index of the sclerotic nucleus adds plus power, producing an **index myopia** (a myopic shift).

**Step 2 – why reading improves:** This extra minus-equivalent shift lets a previously presbyopic patient read again without glasses, the classic ‘second sight’, which is temporary and precedes worsening cataract.

**Why the other options are wrong:**

- B, hypermetropic shift: would worsen near vision, the opposite of what is seen.





- C, corneal steepening: is not a feature of nuclear cataract.
- D, posterior vitreous detachment: causes floaters and flashes, not a refractive change.

**Final Answer:** Index myopia (myopic shift)  $\Rightarrow$  A

**Answer: (A)** [Go Back to Q4](#)

**Q5.**

### Solution

**Concept – classifying glaucoma:** Glaucoma is grouped as primary or secondary, and by whether the drainage angle is open or closed.

**Step 1 – primary or secondary:** Here the pressure rise follows another disease (diabetic retinopathy driving neovascularisation), so it is **secondary**.

**Step 2 – open or closed:** Early on the fibrovascular membrane obstructs an anatomically *open* angle, so this is a **secondary open-angle glaucoma** (neovascular glaucoma before the angle scars shut).

**Why the other options are wrong:**

- A, primary open-angle: has no identifiable underlying cause, unlike this case.
- C, primary angle-closure: is due to a shallow anterior chamber and pupil block, not a membrane.
- D, congenital glaucoma: presents in infancy with buphthalmos.

**Final Answer:** Secondary open-angle glaucoma  $\Rightarrow$  B

**Answer: (B)** [Go Back to Q5](#)

**Q6.**

### Solution

**Concept – drugs that precipitate angle closure:** Anything that dilates the pupil can push the peripheral iris into a narrow angle and block drainage.

**Step 1 – identify the danger: Systemic anticholinergics** (for example oral atropine or hyoscine) dilate the pupil and can trigger acute angle-closure in a pre-disposed narrow-angle eye.

**Step 2 – the mechanism:** A mid-dilated pupil maximises pupil block and crowds the angle, raising the risk of a sudden pressure spike.



**Why the other options are wrong:**

- A, acetazolamide: lowers pressure and is used to treat, not cause, angle closure.
- B, pilocarpine: constricts the pupil and opens the angle, so it helps.
- C, propranolol: is systemic and has no significant mydriatic effect on the angle.

**Final Answer:** A systemic anticholinergic (atropine or hyoscine) ⇒ D

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

**Q7.**

### Solution

**Concept – the fovea:** The fovea is the centre of the macula and the site of sharpest vision.

**Step 1 – read the diagram:** The central depression (marked **X**), avascular, cone-packed and with a near one-to-one cone-to-ganglion link, is the **fovea centralis**.

**Step 2 – why acuity is highest here:** The high cone density and dedicated wiring give the finest spatial resolution, aided by the foveal avascular zone that keeps light unobstructed.

**Why the other options are wrong:**

- B, optic disc: has no photoreceptors and forms the blind spot.
- C, ora serrata: is the peripheral edge of the functioning retina.
- D, peripheral nasal retina: is rod-rich with poor acuity.

**Final Answer:** Fovea centralis ⇒ A

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

**Q8.**

### Solution

**Concept – proliferative sickle cell retinopathy:** Sickled red cells occlude peripheral retinal vessels, causing ischaemia and new vessel growth.

**Step 1 – read the clues:** Peripheral ischaemia with fronds of **sea-fan neovascularisation** at the perfused and non-perfused border defines proliferative sickle cell retinopathy.



**Step 2 – the risk:** These fragile new vessels can bleed into the vitreous or drag the retina, causing vitreous haemorrhage and tractional detachment.

**Why the other options are wrong:**

- A, central serous retinopathy: is a macular serous detachment in young men under stress, without sea-fans.
- C, age-related macular degeneration: affects the macula of older adults, not the ischaemic periphery.
- D, hypertensive retinopathy: shows arteriolar narrowing and flame haemorrhages, not sea-fan fronds.

**Final Answer:** Proliferative sickle cell retinopathy ⇒ **B**

**Answer: (B)** [Go Back to Q8](#)

**Q9.**

### Solution

**Concept – legal blindness and low-vision aids:** Legal blindness is a threshold of acuity or field, not a total absence of sight.

**Step 1 – apply the definition:** Best-corrected acuity of 6/60 or worse in the better eye, or a field of 20 degrees or less, meets legal blindness; most such people retain some useful residual vision.

**Step 2 – how to help: Low-vision aids,** such as magnifiers, telescopes and high-plus reading additions, plus lighting and contrast measures, maximise the remaining vision.

**Why the other options are wrong:**

- A, no intervention: is wrong; rehabilitation almost always helps.
- B, only a corneal graft: treats only corneal causes, not the general case.
- C, only cataract surgery: applies only when cataract is the cause.

**Final Answer:** Low-vision aids (magnifiers, telescopes, high-plus adds) ⇒ **D**

**Answer: (D)** [Go Back to Q9](#)



Q10.

**Solution**

**Concept – anisometropia and aniseikonia:** A large power difference between the eyes, when corrected by spectacles, magnifies the two images unequally.

**Step 1 – name the problem:** Thick spectacle lenses sit far from the eye and produce very different image sizes, causing **aniseikonia** and difficulty fusing the images.

**Step 2 – the best fix: Contact lenses** (or refractive surgery) sit at the corneal plane, so they cause far less difference in retinal image size and are the preferred correction.

**Why the other options are wrong:**

- A, stronger spectacles: worsens the image-size difference.
- B, bifocals: address presbyopia, not aniseikonia.
- C, occlusion: sacrifices binocular vision rather than restoring it.

**Final Answer:** Contact lenses (or refractive surgery) ⇒ **D**

**Answer: (D)** [Go Back to Q10](#)

Q11.

**Solution**

**Concept – tunnel vision:** Tunnel vision is severe concentric constriction of the field leaving only a small central island.

**Step 1 – read the field:** The schematic shows loss of the peripheral field with only a preserved central island (marked X), the pattern of **retinitis pigmentosa**.

**Step 2 – other classic causes:** Advanced glaucoma and extensive panretinal photocoagulation also constrict the periphery while sparing central vision, matching this picture.

**Why the other options are wrong:**

- A, acute angle-closure glaucoma: causes an acute painful red eye, not chronic tunnel vision.
- C, central retinal artery occlusion: causes sudden total loss, not a preserved central island.
- D, optic neuritis: typically causes a central scotoma, the opposite of peripheral constriction.



**Final Answer:** Retinitis pigmentosa  $\Rightarrow$

**Answer:** (B) [Go Back to Q11](#)

Q12.

### Solution

**Concept – HLA-B27 anterior uveitis:** Acute anterior uveitis is strongly linked to the HLA-B27 group of seronegative spondyloarthropathies.

**Step 1 – read the clues:** Ankylosing spondylitis with a recurrent painful, photophobic, small-pupilled red eye points to **HLA-B27** associated acute anterior uveitis.

**Step 2 – the wider association:** The same marker links uveitis to reactive arthritis, psoriatic arthritis and inflammatory bowel disease.

**Why the other options are wrong:**

- A, HLA-DR3: is linked to other autoimmune diseases, not this uveitis pattern.
- C, RB1 gene: is the retinoblastoma gene, unrelated to uveitis.
- D, BRCA1 gene: relates to breast and ovarian cancer, not uveitis.

**Final Answer:** HLA-B27  $\Rightarrow$

**Answer:** (B) [Go Back to Q12](#)

Q13.

### Solution

**Concept – orbital rhabdomyosarcoma:** Rhabdomyosarcoma is the commonest primary orbital malignancy of childhood.

**Step 1 – read the clues:** Rapidly progressive unilateral proptosis over weeks with globe displacement in a young child is classic for **rhabdomyosarcoma**.

**Step 2 – why speed matters:** It grows quickly and needs urgent biopsy and combined chemotherapy and radiotherapy, with a good prognosis if treated early.

**Why the other options are wrong:**

- B, retinoblastoma: is an intraocular tumour presenting with leukocoria, not rapid proptosis.
- C, orbital cellulitis: follows sinusitis with fever and painful red swelling, an infective, not malignant, cause.
- D, chalazion: is a small painless lid cyst, not an orbital mass.



**Final Answer:** Rhabdomyosarcoma ⇒ A

**Answer: (A)** [Go Back to Q13](#)

Q14.

### Solution

**Concept – leukocoria and Coats disease:** Leukocoria has several causes, and the exudative pattern of Coats disease is a key one to recognise.

**Step 1 – match the clues:** A boy with retinal telangiectasia and yellowish subretinal exudate, without intraocular calcification, has **Coats disease**.

**Step 2 – the contrast with retinoblastoma:** Retinoblastoma classically shows a calcified intraocular mass; the *absence* of calcification here helps distinguish Coats disease from it.

**Why the other options are wrong:**

- A, refractive error: does not cause a white pupillary reflex.
- B, conjunctivitis: is a red discharging eye, not leukocoria.
- D, sty: is a lid-margin abscess and does not affect the pupillary reflex.

**Final Answer:** Coats disease ⇒ C

**Answer: (C)** [Go Back to Q14](#)

Q15.

### Solution

**Concept – managing a ruptured globe:** An open globe must be protected from any pressure that could extrude intraocular contents.

**Step 1 – name the correct step:** Apply a **rigid protective shield with no pressure**, keep the patient **nil by mouth** and arrange **urgent surgical repair**.

**Step 2 – why each part matters:** No pressure prevents extrusion of ocular contents; nil by mouth prepares for general anaesthesia; prompt surgery and antibiotics reduce infection and vision loss.

**Why the other options are wrong:**

- A, firm pressure padding: can push out intraocular contents and is dangerous.
- B, removing protruding tissue: worsens the injury; leave prolapsed tissue in



place.

- D, steroid drops and discharge: dangerously delays the needed surgical repair.

**Final Answer:** Rigid shield, nil by mouth, urgent surgery  $\Rightarrow$  C

**Answer: (C)** [Go Back to Q15](#)



**Answer Key**

| Q  | Ans | Q  | Ans | Q  | Ans | Q  | Ans | Q  | Ans |
|----|-----|----|-----|----|-----|----|-----|----|-----|
| 1  | C   | 2  | C   | 3  | A   | 4  | A   | 5  | B   |
| 6  | D   | 7  | A   | 8  | B   | 9  | D   | 10 | D   |
| 11 | B   | 12 | B   | 13 | A   | 14 | C   | 15 | C   |

