

INI CET Ophthalmology

Sample Paper – 9

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.** The rich sensory (touch and pain) supply of the cornea is carried by the ophthalmic division of a particular cranial nerve. Loss of this supply leaves an anaesthetic cornea that breaks down as a neurotrophic keratitis. The nerve responsible is the:
- (A) Facial nerve (seventh cranial nerve)
 - (B) Optic nerve (second cranial nerve)
 - (C) Trigeminal nerve (fifth cranial nerve), through its ophthalmic division
 - (D) Oculomotor nerve (third cranial nerve)



- Q2.** A worker sustains an alkali (lime) splash to the eye. After immediate copious irrigation until the pH normalises, which additional early measure best promotes surface healing and limits scarring in a severe burn?
- (A) High-dose systemic steroids as the sole treatment
 - (B) Urgent penetrating keratoplasty within the first few hours
 - (C) A tight pressure patch with no medication
 - (D) Topical ascorbate (vitamin C) and citrate with amniotic membrane transplantation
- Q3.** A long-term soft contact lens wearer complains of itching, stringy mucus discharge and lens intolerance. Everting the upper lid shows large 'cobblestone' papillae on the upper tarsal conjunctiva. The diagnosis is:
- (A) Trachoma
 - (B) Acute bacterial conjunctivitis
 - (C) Episcleritis
 - (D) Giant papillary conjunctivitis

Lens and Glaucoma

- Q4.** In a poorly controlled diabetic, excess glucose in the lens is converted by aldose reductase along the polyol pathway. The sugar alcohol that accumulates, draws in water osmotically and drives cataract formation is:
- (A) Glycogen
 - (B) Sorbitol
 - (C) Cholesterol
 - (D) Lactate
- Q5.** Prostaglandin analogue eye drops (for example latanoprost), a first-line treatment in primary open-angle glaucoma, lower the intraocular pressure mainly by:



- (A) Reducing aqueous production by the ciliary epithelium
- (B) Constricting the pupil to mechanically open the angle
- (C) Increasing trabecular outflow alone
- (D) Increasing the uveoscleral outflow of aqueous humour

Q6. Several months after a blunt injury from a squash ball, a patient is found to have a raised intraocular pressure. Gonioscopy shows a widened, torn ciliary band in the drainage angle of that eye. The diagnosis is:

- (A) Angle-recession glaucoma
- (B) Acute angle-closure glaucoma
- (C) Primary open-angle glaucoma
- (D) Normal-tension glaucoma

Retina and Vitreous

Q7. Fluorescein angiography, in which dye is injected intravenously and the fundus photographed, is most valuable in retinal vascular disease for:

- (A) Measuring the intraocular pressure
- (B) Assessing corneal thickness
- (C) Demonstrating capillary leakage, microaneurysms and areas of non-perfusion
- (D) Grading the density of a nuclear cataract

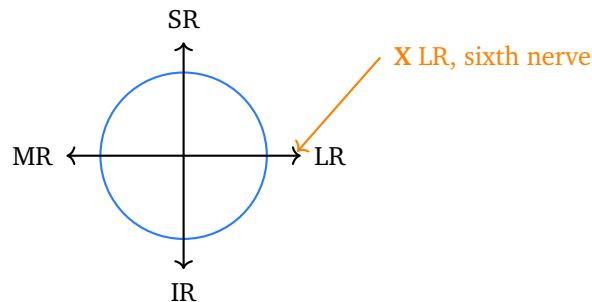
Q8. A young man who stared at a solar eclipse without protection now reports a small central blur in both eyes, with subtle foveal changes but an otherwise normal fundus. The most likely diagnosis is:

- (A) Solar (photic) maculopathy, or eclipse retinopathy
- (B) Central retinal artery occlusion
- (C) Optic neuritis
- (D) Vitreous haemorrhage

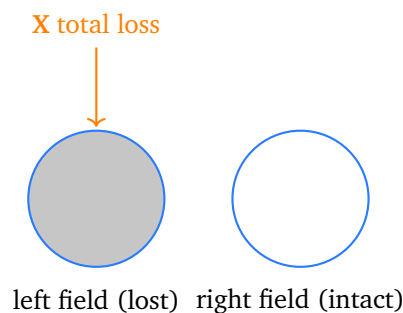


Neuro-ophthalmology and Optics

- Q9.** The schematic below marks (at X) the muscle that pulls the eye outward. Recalling the 'LR6 SO4' rule for extraocular muscle nerve supply, which statement is correct?



- (A) The lateral rectus is supplied by the sixth (abducens) nerve and the superior oblique by the fourth (trochlear) nerve; all the rest are supplied by the third nerve
- (B) The lateral rectus is supplied by the third (oculomotor) nerve
- (C) All the extraocular muscles are supplied by the fourth (trochlear) nerve
- (D) The superior oblique is supplied by the sixth (abducens) nerve
- Q10.** The diagram shows the left visual field completely blacked out (marked X) with the right field intact. A swinging-torch test shows the left pupil dilating when the light reaches it. A complete lesion of the left optic nerve produces:



- (A) Bitemporal hemianopia
- (B) Homonymous hemianopia

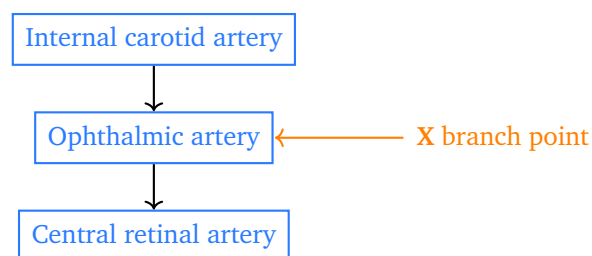
- (C) Complete blindness of that eye with a relative afferent pupillary defect
- (D) A normal field with normally reacting pupils

Q11. A patient with a fresh sixth-nerve palsy has horizontal diplopia. On diplopia (cover) charting, the general rule for locating the weak muscle is that:

- (A) The two images are always equally separated in every direction of gaze
- (B) The inner image always belongs to the paretic muscle
- (C) The outer (more peripheral) image belongs to the paretic muscle, and the images separate most in that muscle's field of action
- (D) Diplopia charting reflects the macula, not the muscles

Uvea, Orbit and Ocular Adnexa

Q12. The flow chart below traces the arterial supply that reaches the retina (branch point marked X). The central retinal artery, which supplies the inner retina, is a branch of:



- (A) The external carotid artery directly
- (B) The ophthalmic artery, itself a branch of the internal carotid artery
- (C) The facial artery
- (D) The middle meningeal artery

Q13. A middle-aged patient has a slowly enlarging, painless, firm mass in the superotemporal orbit that pushes the eyeball downward and inward, without bone destruction. The most likely benign lacrimal gland tumour is:



- (A) Orbital cellulitis
- (B) Pleomorphic adenoma (benign mixed tumour) of the lacrimal gland
- (C) Capillary haemangioma
- (D) Optic nerve glioma

Paediatric Ophthalmology and Emergencies

- Q14.** During the routine newborn examination, shining an ophthalmoscope from about an arm's length gives a symmetrical orange-red glow from each eye (the red reflex test). This simple screen is chiefly used to detect:
- (A) Congenital cataract and retinoblastoma (a white or absent reflex needs urgent referral)
 - (B) A refractive error only
 - (C) Colour blindness
 - (D) A raised intraocular pressure
- Q15.** A patient presents with a painful, watering eye after a fingernail scratch; fluorescein shows a corneal epithelial abrasion. The correct immediate management is:
- (A) A tight double eye pad for every patient
 - (B) A topical antibiotic and analgesia, avoiding an eye patch in contact-lens wearers
 - (C) A topical steroid alone
 - (D) An urgent corneal graft



Detailed Solutions

Q1.

Solution

Concept – corneal sensation: The cornea is one of the most densely innervated tissues in the body, and this sensory supply protects it.

Step 1 – trace the nerve: Corneal touch and pain are carried by the **ophthalmic division** of the **trigeminal (fifth) nerve**, through the long ciliary nerves.

Step 2 – link to disease: If this supply is lost, the cornea becomes anaesthetic; it fails to blink and heal, and breaks down as a **neurotrophic keratitis**.

Why the other options are wrong:

- A, facial nerve: is *motor* to orbicularis (closing the lids), not sensory to the cornea.
- B, optic nerve: carries vision, not corneal sensation.
- D, oculomotor nerve: is motor to most eye muscles, not sensory.

Final Answer: Trigeminal (fifth) nerve $\Rightarrow$

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

Q2.

Solution

Concept – alkali burn beyond irrigation: After the chemical is washed out, treatment aims to promote surface healing and limit scarring.

Step 1 – recall the adjuncts: **Topical ascorbate (vitamin C)** and **citrate** support collagen repair and dampen the inflammatory cascade, and **amniotic membrane transplantation** provides a healing scaffold over the damaged surface.

Step 2 – the overall plan: These sit alongside lubrication, antibiotics and steroids in the early phase, once irrigation is complete and the pH is neutral.

Why the other options are wrong:

- A, systemic steroids alone: are not the key early surface measure.
- B, urgent keratoplasty in hours: is not done acutely; grafting waits for the surface to stabilise.
- C, tight patch with no medication: neglects the ongoing chemical injury and infection risk.



Final Answer: Topical ascorbate/citrate with amniotic membrane $\Rightarrow$ D

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

Q3.

Solution

Concept – giant papillary conjunctivitis (GPC): GPC is a mechanical and allergic reaction of the upper tarsal conjunctiva to a chronic foreign body.

Step 1 – read the clues: A long-term **soft contact lens** wearer with itching, stringy mucus, lens intolerance and large ‘cobblestone’ papillae on the **upper tarsal conjunctiva** has GPC.

Step 2 – management: Stopping or changing the lens, better lens hygiene and mast-cell stabilisers settle it.

Why the other options are wrong:

- A, trachoma: is a chlamydial infection with follicles and scarring, not lens-related giant papillae.
- B, bacterial conjunctivitis: gives sticky pus and diffuse redness, not tarsal cobblestones.
- C, episcleritis: is a localised scleral surface inflammation, not a papillary tarsal reaction.

Final Answer: Giant papillary conjunctivitis $\Rightarrow$ D

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

Q4.

Solution

Concept – the sorbitol (polyol) pathway: The lens has no blood supply and relies on glucose metabolism; in diabetes this pathway is overloaded.

Step 1 – follow the chemistry: Excess glucose is reduced by **aldose reductase** to **sorbitol**, which cannot easily leave the lens fibres.

Step 2 – how cataract forms: Trapped sorbitol draws in water osmotically, swelling and disrupting the fibres and clouding the lens (osmotic or ‘sugar’ cataract).

Why the other options are wrong:



- A, glycogen: is a storage polysaccharide, not the osmotic culprit in the lens.
- C, cholesterol: is a membrane lipid, not the product of aldose reductase.
- D, lactate: is a product of anaerobic glycolysis, not the osmotic sugar alcohol here.

Final Answer: Sorbitol $\Rightarrow$ B

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

Q5.

Solution

Concept – prostaglandin analogues: These are the commonest first-line drops in primary open-angle glaucoma.

Step 1 – name the mechanism: Prostaglandin analogues such as latanoprost lower pressure chiefly by **increasing uveoscleral outflow** of aqueous, remodelling the ciliary muscle spaces.

Step 2 – the practical points: They give strong once-nightly pressure control; side effects include iris darkening and eyelash growth.

Why the other options are wrong:

- A, reducing aqueous production: is the action of beta-blockers and carbonic anhydrase inhibitors.
- B, constricting the pupil: describes pilocarpine, a miotic, not a prostaglandin.
- C, trabecular outflow alone: is not the principal route for prostaglandins; their main effect is uveoscleral.

Final Answer: Increased uveoscleral outflow $\Rightarrow$ D

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

Q6.

Solution

Concept – angle-recession glaucoma: Blunt trauma can tear the face of the ciliary body, damaging the drainage angle.

Step 1 – read the history and gonioscopy: Months after a **blunt injury**, a raised pressure with a **widened, torn ciliary band** on gonioscopy defines angle-recession glaucoma.

Step 2 – why it is delayed: Scarring of the trabecular meshwork over months to



years reduces outflow, so the pressure rise often appears long after the injury.

Why the other options are wrong:

- B, acute angle-closure: is a sudden painful attack with a closed angle, not a recessed one.
- C, primary open-angle glaucoma: has no trauma history and a normal angle on gonioscopy.
- D, normal-tension glaucoma: has disc and field damage *without* a raised pressure.

Final Answer: Angle-recession glaucoma $\Rightarrow$ A

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

Q7.

Solution

Concept – fluorescein angiography (FFA): FFA images the dynamic flow of dye through the retinal circulation.

Step 1 – state its main use: It best shows **capillary leakage, microaneurysms and areas of non-perfusion** in retinal vascular disease such as diabetic retinopathy and vein occlusion.

Step 2 – how this guides treatment: Mapping leakage and ischaemic (non-perfused) zones directs laser and anti-VEGF therapy.

Why the other options are wrong:

- A, intraocular pressure: is measured by tonometry, not angiography.
- B, corneal thickness: is measured by pachymetry.
- D, cataract density: is graded clinically at the slit lamp, not by FFA.

Final Answer: Capillary leakage and non-perfusion $\Rightarrow$ C

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



Q8.

Solution

Concept – solar (photic) maculopathy: Focused sunlight can cause a photochemical burn at the fovea.

Step 1 – read the history: Unprotected **eclipse gazing** followed by a small central blur, mild foveal changes and an otherwise normal fundus points to **solar (photic) maculopathy**, or eclipse retinopathy.

Step 2 – the course: The scotoma often partly recovers over weeks to months; there is no specific curative treatment, so prevention (never watch an eclipse unprotected) is key.

Why the other options are wrong:

- B, central retinal artery occlusion: causes sudden *total* painless loss with a pale retina, not a small central blur.
- C, optic neuritis: causes painful visual loss with an afferent pupil defect, unrelated to sun gazing.
- D, vitreous haemorrhage: causes floaters and a hazy fundus view, not a focal foveal lesion.

Final Answer: Solar (photic) maculopathy ⇒ A

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

Q9.

Solution

Concept – extraocular muscle nerve supply: The classic mnemonic is ‘**LR6 SO4**’ (the rest by the third nerve).

Step 1 – decode the rule: The **lateral rectus** is supplied by the **sixth (abducens)** nerve and the **superior oblique** by the **fourth (trochlear)** nerve.

Step 2 – the remainder: All the other extraocular muscles (medial, superior and inferior recti, and inferior oblique) are supplied by the **third (oculomotor)** nerve, which also raises the lid and constricts the pupil.

Why the other options are wrong:

- B, lateral rectus by the third nerve: is wrong; it is the sixth.
- C, all muscles by the fourth nerve: is wrong; the fourth supplies only the superior oblique.
- D, superior oblique by the sixth nerve: is wrong; it is the fourth.



Final Answer: LR6, SO4, rest by the third $\Rightarrow$ A

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

Q10.

Solution

Concept – a complete optic nerve lesion: The optic nerve carries all the visual and afferent pupillary fibres from one eye.

Step 1 – the field effect: Cutting one optic nerve completely abolishes vision in *that* eye, giving **total monocular blindness**, while the other eye's field is normal.

Step 2 – the pupil sign: Because the afferent limb is lost, a swinging-torch test shows a **relative afferent pupillary defect (RAPD)**: the affected pupil dilates when the light swings to it.

Why the other options are wrong:

- A, bitemporal hemianopia: comes from a chiasmal lesion, not one optic nerve.
- B, homonymous hemianopia: comes from a lesion behind the chiasma.
- D, normal field with normal pupils: cannot occur when a whole optic nerve is destroyed.

Final Answer: Monocular blindness with an RAPD $\Rightarrow$ C

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

Q11.

Solution

Concept – diplopia (cover) charting: Charting the double images helps localise the underactive muscle.

Step 1 – state the rules: The **image separation is greatest in the direction of action of the weak muscle**, and the **more peripheral (outer) image belongs to the paretic eye/muscle**.

Step 2 – apply to a sixth-nerve palsy: A weak lateral rectus gives horizontal diplopia worst on looking to that side, with the outer image from the affected eye.

Why the other options are wrong:

- A, equal separation everywhere: is wrong; separation varies with gaze direction.



- B, inner image belongs to the paretic muscle: reverses the rule; it is the outer image.
- D, charting reflects the macula: is wrong; it reflects muscle action, not the macula.

Final Answer: Outer image from the paretic muscle, max separation in its field $\Rightarrow$

C

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

Q12.

Solution

Concept – ocular blood supply: The eye's arterial supply is traced back to the internal carotid.

Step 1 – follow the chain: The **internal carotid artery** gives off the **ophthalmic artery**, which in turn gives the **central retinal artery** supplying the inner retina.

Step 2 – clinical link: Because this artery is an end-artery, its occlusion (CRAO) causes sudden painless total visual loss.

Why the other options are wrong:

- A, external carotid directly: is wrong; the ophthalmic artery arises from the *internal* carotid.
- C, facial artery: supplies the face, not the retina.
- D, middle meningeal artery: supplies the dura, not the eye.

Final Answer: Ophthalmic artery (from the internal carotid) $\Rightarrow$ **B**

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

Q13.

Solution

Concept – lacrimal gland tumours: The lacrimal gland sits in the superotemporal orbit, so its tumours displace the eye down and in.

Step 1 – read the pattern: A **slow, painless, firm** mass with *no* bone destruction is the benign **pleomorphic adenoma** (benign mixed tumour).

Step 2 – the contrast: A rapidly growing, *painful* mass with bone destruction and nerve involvement would instead suggest adenoid cystic carcinoma; pain and speed are the warning features. This case is painless and slow, so it is benign.



Why the other options are wrong:

- A, orbital cellulitis: is acute, painful and febrile, not a slow painless mass.
- C, capillary haemangioma: is a vascular lesion of infancy, not a firm adult lacrimal mass.
- D, optic nerve glioma: sits within the muscle cone and causes proptosis with early vision loss, not a superotemporal gland mass.

Final Answer: Pleomorphic adenoma of the lacrimal gland ⇒ **B**

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

Q14.

Solution

Concept – the red reflex test: A symmetrical orange-red glow means clear ocular media and a healthy fundus.

Step 1 – state its purpose: In the newborn it chiefly screens for **congenital cataract and retinoblastoma**; a white, dark or absent reflex (leukocoria) demands urgent referral.

Step 2 – why it matters: Early detection of both conditions is sight-saving and, for retinoblastoma, life-saving.

Why the other options are wrong:

- B, refractive error only: is not what the newborn red reflex screens for.
- C, colour blindness: is tested later with Ishihara plates, not the red reflex.
- D, intraocular pressure: is measured by tonometry, unrelated to this test.

Final Answer: Congenital cataract and retinoblastoma ⇒ **A**

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

Q15.

Solution

Concept – corneal abrasion: A simple epithelial abrasion heals quickly once infection is prevented and pain controlled.

Step 1 – name the management: Give a **topical antibiotic** (to prevent infection) with **analgesia**, and **avoid an eye patch in contact-lens wearers** because of the higher risk of *Pseudomonas* infection under a patch.



Step 2 – follow-up: Most abrasions re-epithelialise within a day or two; review if symptoms persist to exclude an ulcer.

Why the other options are wrong:

- A, tight patch for everyone: is outdated and is specifically dangerous in lens wearers.
- C, topical steroid alone: does not treat the raw surface and risks worsening any infection.
- D, urgent corneal graft: is grossly excessive for a simple abrasion.

Final Answer: Topical antibiotic and analgesia, no patch in lens wearers ⇒ B

Answer: (B) [Go Back to Q15](#)



Answer Key

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

