

## D.N.B. QUESTION BANK

### BASIC SCIENCES: ANATOMY

#### Extra ocular

1. Anatomy of lacrimal gland and nerve supply
2. Anatomy of upper lid
3. Anatomy of apex of orbit
4. Anatomy of cavernous sinus
5. Veins of the orbit
6. Anatomy and action of sympathetic Nerves of eye and orbit. Ocular manifestations of disturbance of system
7. Describe fascial planes with surgical spaces
8. Medial wall of orbit and its clinical importance
9. Superior Orbital Fissure
10. Orbital spaces and their surgical approaches
11. Bony orbit and its applied aspects
12. Methods of surgical approach for an orbital growth
13. Describe various openings in the orbit and clinical importance
14. Anatomy of septum orbitale - development and function
15. Paraorbital region with emphasis of surgical anatomy
16. Anatomy of nasociliary nerve
17. Blood supply of optic nerve head and intraorbital part of optic nerve
18. Course, relations and branches of ophthalmic Artery
19. Origin, course, relations of abducens nerve
20. Anatomy of Extraocular muscles
21. Superior oblique muscle
22. LPS attachments and insertion
23. Anatomy of the visual pathways - correlate the clinical picture produced by different lesions at different levels
24. Anatomy of Inferior Oblique - IO paralysis diagnosis
25. Anatomic relations of optic chiasma
26. Connections, relations and anatomy of ciliary ganglion
27. Nuclei of 3,4,6 cranial nerve anatomy and connections
28. Origin, course and relations of optic nerve
29. Blood supply of visual tract
30. Optic nerve anatomy
31. Anatomy of muscle cone
32. Describe check ligaments of eye with surgical importance
33. Describe behaviour of Optic Nerve head in injury
34. Anatomy of NLD and its blockage
35. LPS anatomy
36. IV<sup>th</sup> Nerve - anatomy and course
37. Innervation of intraocular and extra ocular - muscles / sympathetic nerve supply
38. Congenital musculofacial anomalies
39. Medial palpebral ligament
40. Development of the lacrimal system
41. Centres in the brain which control functions of the eye
42. How does trachoma after anatomy of lid

## **Intraocular**

43. Structure and function of ciliary body
44. Ora Serrata of peripheral retina
45. Corneal endothelium
46. Anatomy of retina/ development and histological structure
47. Tenon's capsule
48. Cup disc ratio
49. Surgical limbus
50. Electron microscopy of retinal cone
51. Vitreous hyalocytes
52. Composition of tear film
53. Electron Microscopy of rods
54. Structural variation in the AC angle
55. Capsule of lens
56. Trisome 23-21 in ocular disorders
57. Nanophthalmos
58. Anatomy of RPE and diagnosis of lesions
59. Anatomy of angle of AC - 2 syndromes
60. Coloboma Iridis
61. Gray line, Anatomic limbus, equator
62. Trabecular meshwork - microanatomy.
63. Differentiation of mesoderm which enters the 2<sup>o</sup> optic vesicle - clinical features of common developmental anomalies of the mesoderm.
64. Anatomy of canal of Schlemm
65. Histology of macular area
66. Structure of vitreous humor
67. Congenital defects of the iris
68. Anatomical basis of corneal sensitivity
69. Anatomy of crystalline lens - changes with old age
70. Congenital defects of ocular structures
71. Congenital defects of iris

## **PHYSIOLOGY**

1. Normal conjunctival flare
2. Physiology of tears and role in dry eye syndrome
3. Protective mechanisms of the eye

## **Cornea**

4. Discuss deturgence of cornea
5. Factors affecting transparency of cornea

## **Acqueous**

6. Ocular rigidity
7. Blood aqueous barrier
8. Formation of aqueous humor/drainage of aqueous humor

9. Composition of aqueous humour and its clinical impression
10. Factors regulating the normal IOP
11. Control of aqueous formation (theories)
12. Action of drugs which influence IOP
  1. Dipivefrin Hydrochloride
  2. Thymoxamine
  3. Betaxolol
  4. Acetylcholine
  5. Effect of parasympathetic drugs
  6. Action of Diamox
  7. Long acting Miotics
  8. Side effects of Phospholine iodide

### Others

9. Steroids in Ophthalmology
10. Oral hypoglycemic drugs ( mode of action, etc.)
11. Sodium chromoglycate
12. MK medium/likerol
13. Visco elastics in IOL implant surgery - types and uses
14. Ocular side effects of drugs for TB
15. Properties of fluorescein and ophthalmic use
16. Hyaluronidase
17. Ocuserts
18. Adverse ocular actions of oral contraceptives
19. Modes of drug delivery in Ophthalmology
20. Chloroquine toxicity
21. Merits and demerits of drugs in cataract surgery
22. Antimetabolites
23. Mydriatics
24. Immunosuppressives in Ophthalmology
25. Miotics with reference to management of squint
26. Indomethacin

## PATHOLOGY

### Extraocular

1. Papilloma
2. Meibomian gland carcinoma
3. HPE Rodent ulcer
4. HPE of chalazion
5. Path of tumours of lacrimal sac.
6. HPE of ocular dermoids
7. HPE of phlycten
8. HPE of vernal catarrh
9. Conjunctival Cytology in health and disease
10. Path of pterygium
11. Pathology of trachoma follicles

### **Anterior segment**

12. Pannus formation
13. Refractive errors (Myopia, Hyperopia)
14. Arcus senilis
15. Histology of conjunctival xerosis
16. Pathogenesis of corneal graft rejection
17. Trabecular meshwork in the pathogenesis of glaucoma
18. Open angle glaucoma
19. Koeppe and Busacca nodules
20. HPE of absolute glaucoma

### **Posterior segment**

21. Dalen fuch's nodule
22. Myopic chorioretinal degeneration
23. Pathogenesis of age-related cataract
24. CMV retinitis
25. Pathology of temporal arteritis
26. Pathogenesis of asteroid hyalitis
27. Path of toxoplasmosis
28. Path of posterior uveitis
29. Pathogenesis of Diabetic Retinopathy
30. Pathogenesis of atherosclerotic retinopathy
31. Disciform degeneration
32. Choroidal detachment.
33. Eales' disease
34. Central Serous Retinopathy
35. Cystoid Macular Edema
36. Macular scar
37. Coat's disease
38. Vasculitis Retinae
39. Retinitis Pigmentosa
40. Berlin's edema

### **Tumours**

41. Meningioma
42. Describe several pathological changes seen on Optic Nerve Head
43. HPE of retinoblastoma
44. Malignant melanoma - Histo types + path.
45. Pathology of Optic Nerve tumours
46. Pathology of pseudotumour of orbit
47. HPE of pseudoglioma
48. Pigmented tumors of the eye
49. Dyktyoma
50. Flexner - Wintersteiner rosette

## **Miscellaneous**

51. HLA antigens and eye
52. Radiation changes in the eye
53. Ocular changes in TB
54. Modern concepts of allergic reactions - role of allergy in ocular diseases
55. Pathology of ocular changes in Diabetes Mellitus
56. Thyroid exophthalmopathy

## **MICROBIOLOGY**

### **Bacteria**

1. Diplococci
2. Corynebacterium xerosis
3. Pneumococci
4. Morax-Axenfield Bacillus
5. Serological tests of syphilis
6. Bacillus pyocyanus (pseudomonas aeruginosa)
7. Lepra bacillus
8. Normal flora of healthy eye
9. Staphylococcus
10. Acid fast bacillus
11. Gonococcus and ocular manifestations

### **Viruses**

12. ELISA Test
13. Molluscum contagiosum
14. Brief morphological features and ocular manifestations of viruses affecting the eye
15. Development of TRIC virus cycle
16. Herpes simplex Virus
17. Adenovirus

### **Miscellaneous**

18. Toxoplasma gondii
19. Rhinosporidiosis
20. Morphology of common fungi affecting eye and the lesions
21. Parasites and pathological lesions in eye and orbit
22. Ocular myiasis
23. Arthus phenomenon
24. Sterilisation of instruments in the O.T.
25. Preoperative smear examination and its role

## **CLINICAL SCIENCES**

### **OPTICS, REFRACTION & ORTHOPTICS**

1. Normal AC/A ratio
2. Accommodation - abnormality & drugs affecting it
3. Insufficiency of accommodation
4. Estimation of AC/A ratio and its clinical significance
5. Correction of unocular aphakia - advantages and disadvantages
6. Myopia
7. Anisometropia
8. Pathophysiology of common errors of refraction
9. Presbyopia
10. Optical defects of the normal eye
11. Investigations of eye strain
12. Horopter
13. Uses of prisms in Ophthalmology
14. Donder's schematic eye/Reduced eye
15. Principle of retinoscopy and uses of plane mirror in ophthalmic practice
16. Toric transposition of lenses
17. Jackson's Cross Cylinder
18. Sturms's conoid
19. Aspheric lenses
20. Optics of low vision aids
21. Low vision aids in Macular degenerations
22. Verification of spectacles
23. Back vertex distance
24. Maddox Rod
25. Assessment of stereopsis in clinical practice
26. Bagolini striated glasses

### **SQUINT & CONTACT LENS**

1. Accommodative squint
2. Management of Blepharospasm
3. Investigate & manage a case of strabismus
4. Duane's retraction syndrome (Turk's disease )
5. Occlusion therapy
6. Investigations and management of concomitant esotropia
7. Management of amblyopia / experimental amblyopia (central lesions)
8. Signs, symptoms, investigations and treatment of Accommodative esotropia/Esotropia
9. Heterophoria
10. Importance of Hess Chart in diagnosis of ocular palsy
11. Eccentric fixation - treatment and prognosis
12. Pleoptics
13. Gaze movement and gaze palsy
14. Management of alternate convergent squint
15. Synoptophore
16. Surgery for vertical muscles in squint
17. Botulinum toxin treatment of eye muscle disorders
18. Management of exophoria/Types of Divergent Squint
19. Superior oblique sheath syndrome
20. Diagnosis of Inferior oblique paralysis

21. Defective elevation of one eye
22. Head postures in paralytic squint/management of paralytic squint
23. Diplopias
24. VI th cranial nerve palsy
25. Extended wear lenses
26. Monofixation syndrome (Microtropia)
27. Adjustable sutures in squint surgery - Advantages/disadvantages
28. Soft contact lens
29. Piggyback system of contact lens
30. Optics of contact lens
31. Hydrocurve contact lenses
32. Oxygen delivery through contact lens

## **NEURO-OPHTHALMOLOGY**

### **Proptosis**

1. Management of exophthalmos
2. Causes, investigations and treatment of unilateral proptosis
3. Diagnosis and management of unilateral proptosis in children
4. Proptosis due to Intracranial lesions, How a field exam helps to locate the site of lesion/ocular signs
5. Pulsating exophthalmos
6. Rapidly progressive bilateral proptosis - D/D & Management
7. Venography in proptosis
8. Thyrotoxicosis (TRO) / Management of malignant exophthalmos/orbital decompression

### **Optic Nerve**

9. Causes, investigations and management in Migraine - D/D
10. Optokinetic nystagmus
11. III Nerve palsy and investigations
12. Tolosa Hunt Syndrome
13. Cavernous sinus thrombosis
14. Pseudotumors of orbit
15. Ocular signs and symptoms in pituitary tumors
16. Craniopharyngioma

### **Orbit**

1. Surgical management of shallow socket
2. Lateral orbitotomy - Indications/Steps
3. Rhabdomyosarcoma
4. Orbital spaces and surgical approaches
5. Enucleation - Indications/steps
6. Blowout fracture

## **CORNEA, SCLERA & EXTERNAL DISEASES**

### **Infections**

1. Viral keratitis
2. Acanthamoeba keratitis
3. Disciform keratitis
4. Fungal keratitis (mycotic)
5. Management of corneal ulcer
6. Herpes simplex keratitis

### **Other lesions**

7. Management of Alkali Burns
8. Stromal corneal dystrophies
9. Recurrent pterygium
10. D/D of limbal nodule
11. Cornea guttata
12. Hydrops
13. Terrien's marginal degeneration
14. Retrocorneal membrane
15. Pannus
16. Corneal sensation disorders and management
17. Aetiology of corneal opacities and treatment
18. Corneal staining
19. Endothelial changes following intraocular surgery
20. Corneal blindness and rehabilitation in children
21. Corneal dystrophies / (Congenital Hereditary Endothelial Dystrophy)
22. Recurrent corneal erosions
23. Wilson's disease

### **Surgery**

24. Immunology & Pathology of corneal graft rejection
25. Thermokeratoplasty
26. Radial Keratotomy - indications and complications
27. Refractive keratoplasty
28. Epikeratophakia/glasses/ contact lens in correction of aphakia
29. Penetrating keratoplasty
30. Preservation of donor cornea
31. Lamellar keratoplasty

### **Conjunctiva/sclera**

32. Vitamin A Deficiency
33. Endemic trachoma
34. Pterygium
35. Precancerous and malignant lesions of conjunctiva
36. Epidemic Keratoconjunctivitis
37. Giant pupillary conjunctivitis



## 38. Management of vernal conjunctivitis Conjunctival Impression

### UVEA

#### Anterior Uveitis

1. Acute anterior uveitis
2. Heterochromia iridis
3. Uveitis in white eye
4. Reiter's disease
5. Diagnosis of leprotic Iridocyclitis

#### Posterior Uveitis

6. Toxoplasmosis
7. Panophthalmitis
8. Diagnosis of Sympathetic ophthalmia
9. Vogt Koyanagi harada syndrome
10. Presumed Ocular Histoplasmosis Syndrome
11. Hemorrhagic choroiditis
12. Acute Retinal Necrosis Syndrome
13. Herpes Zoster ophthalmicus & Management
14. Granulomatous uveitis
15. Cytomegalovirus retinitis
16. Uveomeningeal syndromes (VKH)
17. Parsplanitis
18. Central choroiditis

#### Miscellaneous

19. Immunosuppressive agents in Ophthalmology/Posterior Uveitis
20. Melanocytic lesions of the eye
21. Recurrent uveitis
22. Ocular fungal infections
23. Management of uveal melanoma/Diagnosis of Malignant melanoma
24. Etiology / clinical patterns, associated conditions in chronic uveitis
25. Ocular changes in syphilis
26. Ocular lesions in AIDS

### LENS

#### Clinical Conditions

1. Complicated cataract
2. After cataract
3. Subluxated lens
4. Fabry's disease
5. Rubella cataract
6. Macular function tests with interpretation

7. Role of trace metals in senile cataract
8. Diabetic cataract
9. Dermatologic cataract
10. Rosette cataract

### **Surgery**

11. Surgical management of vitreous loss in ECCE
12. Cataract surgery- evolution
13. IOL complications/ Astigmatism in pseudophakos
14. Pseudophakic bullous keratopathy & Management
15. Aphakic bullous keratopathy
16. IOL in children
17. Secondary IOL
18. IOL power calculation
19. Peribulbar anesthesia v/s Retrobulbar anesthesia
20. Aphakic eye problems Vs. Pseudophakic eye
21. IOL for traumatic cataract
22. Phacoemulsification
23. Iridocapsular lens implant
24. Immediate postoperative complications of cataract surgery and treatment
25. Flat anterior chamber after cataract surgery and treatment

## **RETINA**

### **Medical Retina**

1. Diabetic manifestations in the eye
2. Night blindness
3. Central serous retinopathy
4. Panretinal photocoagulation
5. Management of diabetic retinopathy
6. Macular degenerations
7. Temporal arteritis
8. Diabetic maculopathy
9. Circinate retinopathy
10. Macular scar
11. Causes of macular edema - Treatment
12. Pigmentation in the retina
13. Haemorrhages in the retina
14. Micro and macro aneurysms
15. Flashes of light as a symptom
16. Retinal neovascularisation and Management
17. Retinal vein occlusions
18. Heredomacular degenerations
19. Diagnosis of Cystoid macular edema
20. Retinal haemorrhage and management
21. Laser in ARMD/Diagnosis of ARMD
22. Pathogenesis of asteroid hyalitis
23. Sickling hemoglobinopathies and fundus changes

24. Electrodiagnostic procedures in childhood blindness
25. Nanophthalmos/mesodermal dysgenesis
26. Hypertensive retinopathy
27. Management - retinal vein thrombosis
28. Anatomy of macula with its clinical lesions
29. Roth spots in retina
30. Solar retinitis
31. Iris vascularisation and treatment
32. Differential diagnosis - cherry red spot
33. Toxemia of pregnancy

### **Surgical Retina**

34. Management of rhegmatogenous retinal detachment / Features of Rhegmatogenous RD
35. Pneumoretinopexy
36. Cryosurgery in RD and glaucoma (diff. from laser)
37. Choroidal detachment
38. Distribution / frequency of retinal breaks
39. RD in myopia
40. Cryotherapy in retinal breaks
41. Lattice peripheral retinal degeneration - management
42. Retinal dialysis
43. Congenital retinoschisis
44. RD surgery

### **Vitreo-Retina**

45. Management of dislocated IOL in vitreous
46. Management of retained IOFB / complications/Macular FB
47. Recent trends in treatment of retinoblastoma
48. Pars plana lensectomy
49. Subhyaloid haemorrhage
50. Causes and management of postoperative endophthalmitis/prevention
51. Keratoprosthesis
52. Technique and instrumentation for vitreous surgery and recent advances in vitreous surgery
53. LDH in retinoblastoma
54. Retinoblastoma (3 year old child) / chemotherapy
55. Giant retinal tears
56. Causes and management of organised vitreous haemorrhage
57. PHPV
58. Epiretinal membranes
59. Proliferative vitreoretinopathy
60. Postoperative complications of silicone oil
61. Genetics of retinoblastoma
62. Indications of Pars plana vitrectomy
63. Perfluorocarbon liquid in retinal surgery

## **TRAUMA**

1. Essay on ophthalmic emergencies
2. Spontaneous hyphaema
3. Blunt trauma/concussion injuries
4. Eye complications in head injuries
5. Management of total hyphaema
6. Ocular conditions of a child resulting from instrumental delivery/prolonged labour

## **DIAGNOSTICS**

1. Ultrasonography
2. Ultrasound in treatment of ocular disorders
3. B Scan USG in anterior segment lesions
4. Various methods of localising IOFB
5. Methods of imaging the orbit
6. Vitreous fluorophotometry
7. Orbital calcification
8. Evaluation & Interpretation of FFA/Anterior segment FA
9. ERG/EOG/VEP
10. EMG in Ophthalmology
11. Fundus photography/ophthalmic photography

## **COMMUNITY OPHTHALMOLOGY**

1. Keratomalacia
2. Eye Camps in India/objectives
3. School survey for ocular disorders
4. Evaluation of National Blindness Control Program (NGO, World Bank)
5. Corneal blindness and Eye Banks in India.
6. Causes of blindness in 1995. Which group has increased and why?
7. Newer advances in cataract surgery and cataract backlog in India.
8. Steps to reduce complications following eye surgery in an eye camp
9. Setting up a mobile ophthalmic van.

## **MISCELLANEOUS**

### **Systemic Diseases**

1. Ocular manifestations of leprosy with Management of eyelid involvement
2. Ocular manifestations of nutritional deficiency
3. Ocular manifestations of TB & diagnosis
4. Viral manifestations in the eye and management
5. Ocular manifestations of rheumatoid arthritis
6. Ocular reactions of psychoneurosis
7. Ocular manifestations in diseases of bone and plasma
8. Ocular manifestations of inborn errors of metabolism
9. Visual loss in hypertension

### **Blindness**

10. Bilateral blindness in a 1 month old infant
11. Sudden loss of vision - old age, young age
12. Causes of sudden deterioration of vision in elderly and diagnosis
13. Visual standards for different occupations
14. Incurable blindness in elderly and rehabilitation
15. Industrial blindness

### **Miscellaneous**

16. Lasers in Ophthalmology - special reference to anterior segment disorders - IOP Dynamics & Yag Laser
17. Genetic counselling in myopia
18. Ocular neovascularisation
19. Fellow eye - value in diagnosis and management
20. Trisomy 13-21 in ocular disorders
21. Radiotherapy in orbital conditions
22. Radioisotopes in ophthalmology
23. Cautery in ophthalmology
24. Pediatric Ophthalmology
25. Ocular use of well tolerated foreign substances in surgery
26. Use of plastics in Ophthalmology
27. Preventive ophthalmology and medical practice
28. Tests to detect malingering