

**Kerala Government Optometrists Association**

**PSC Training**

**MCQs in  
OPTOMETRY  
AND  
OPHTHALMOLOGY**

## MCQs- Anatomy and Physiology

1. Which cells of the retina are responsible for scotopic vision?

- A. bipolar cells
- B. rod cells ✓
- C. ganglion cells
- D. cone cells

**Human vision is enabled by three primary modes:**

**\*Photopic vision:\*** Vision under well-lit conditions, which provides for color perception, and which functions primarily due to cone cells in the eye.

**\*Mesopic vision:\*** A combination of photopic vision and scotopic vision in low lighting, which functions due to a combination of rod and cone cells in the eye.

**\*Scotopic vision:\*** Monochromatic vision in very low light, which functions primarily due to rod cells in the eye.

2. Which part of the retina has the greatest sensitivity to light?

- A. the optic disc
- B. macula lutea
- C. the choroid
- D. fovea centralis ✓

3. In which colour ranges do the three pigments in the retina have their major sensitivities?

- A. green, red and blue. ✓
- B. red, blue and yellow.
- C. green, yellow and red.
- D. green, yellow and blue.

4. The approximate volume of the orbit is:

- a. 60mL
- b. 10mL
- c. 30mL ✓
- d. 45mL

5. All of the following are part of uvea except:

- a. Pars plicata
- b. Pars plana
- c. Choroid
- d. Schwalbe's line ✓

6. Lens develops from

- a. neural ectoderm
- b. surface ectoderm ✓
- c. optic vesicle
- d. all of the above

## MCQs- Anatomy and Physiology

7. Retina develops from

- a. surface ectoderm
- b. mesoderm
- c. optic vesicle ✓
- d. embryonic fissure

8. Muscles controlling pupil arise from

- a. mesoderm
- b. ectoderm ✓
- c. endoderm
- d. none of the above

9. The avascular structure of eye is

- a. choroid
- b. lens ✓
- c. conjunctiva
- d. ciliary body

10. Aqueous humour is secreted by

- a. angle of anterior chamber
- b. choroid
- c. ciliary body ✓
- d. iris

11. The mucoid layer of Tear film is produced by

- A. Meibomian glands
- B. Main lacrimal gland
- C. Accessory lacrimal glands
- D. Globlet cells ✓

**The mucoid layer lies adjacent to the corneal epithelium is produced by the goblet cells in the conjunctival epithelium. The watery (aqueous) layer is produced by the main lacrimal gland in the superotemporal part of the orbit and accessory lacrimal glands found in the conjunctival stroma. Lipid layer is the oily layer (superficial layer of the tear film) produced by the meibomian glands (modified sebaceous glands) of the eyelid margins with some lipids from the glands of Zeis and Moll.**

12. Main component of human lens

- A. Water ✓
- B. Protein
- C. Collagen
- D. Ascorbic acid

**The lens is comprised of approximately 65% water and 35% protein.**

## MCQs- Anatomy and Physiology

13. During accommodation AC depth will

- A. Increase
- B. Decrease ✓
- C. Remain same
- D. None

14. During accommodation Corneal curvature will

- A. Increase
- B. Decrease
- C. Remain same ✓
- D. None

15. The junction of cornea and sclera is known as

- a. Trabecular meshwork
- b. ciliary body
- c. pupil
- d. limbus ✓

16. The anterior and posterior chamber of the eye are separated by:

- a) Anterior Lens capsule
- b) Posterior Lens capsule
- c) Iris diaphragm ✓
- d) Aqueous humour

17. The normal corneal diameter in adults ranges between:

- a) 10-11 mm
- b) 11-12 mm ✓
- c) 12-13 mm
- d) 09-10 mm

18. Number of intraocular muscles in the eye

- A. 2
- B. 3 ✓
- C. 4
- D. 6

19. The globe is less protected hence vulnerable to injury from:

- a) Superiorly
- b) Laterally ✓
- c) Inferiorly
- d) Posteriorly

## MCQs- Anatomy and Physiology

20. Muscles controlling pupil arise from

- a. mesoderm
- b. ectoderm ✓**
- c. endoderm
- d. none of the above

21 The tear film consist of following except:

- a) Lipid.
- b) Mucus.
- c) Salts.
- d) Water.
- e) Glucose. ✓**

22 The weakest bony orbital wall is:

- a) Lateral.
- b) Medial. ✓**
- c) Floor.
- d) Roof.

23.Bruch's membrane is located on

- A. Cornea
- B. Conjunctiva
- C. Iris
- D. Retina ✓**

24 The main veins draining the choroids is:

- a) Orbital veins.
- b) Vortex veins. ✓**
- c) Posterior ciliary veins.
- d) Central retinal vein.

25 Function of ciliary body

- A. Accommodation
- B. Aqueous production
- C. Both ✓**
- D. None

26. The main depressor of the eyelids is:

- a. Levator
- b. Mueller's muscle
- c. Inferior rectus
- d. Obicularis ✓**

## MCQs- Anatomy and Physiology

27. All the following bones form part of orbit except:

- a) Greater wing of sphenoid.
- b) Frontal bone.
- c) Maxillary bone.
- d) Nasal bone. ✓

28. Approximately power of cornea is?

- a. 60D b. 43D ✓ c. 20D d. 17D

29. Which of the following statement is false?

- a. horizontal diameter of cornea is greater than vertical diameter
- b. Peripheral thickness of cornea is greater than central thickness
- c. once destroyed, the Bowman's layer does not regenerate
- d. Megalocornea occurs due to raised IOP in infancy ✓

**Buphthalmos occurs due to increased IOP in infants. in buphthalmos the whole eyeball size increases**

30. The junction between sclera and cornea is known as?

- a. Arcus senilis
- b. Limbus ✓
- c. Scleral spur
- d. Arlt's line

31. The cornea is supplied by \_\_\_\_\_ nerve.

- a. optic (I)
- b. Trochlear (IV)
- c. Trigeminal (V) ✓
- d. abducen (VI)

32. Which of the following gland is not a part of conjunctiva

- a. Glands of Manz
- b. Glands of Krause
- c. Glands of Wolfring
- d. Glands of Zeis ✓

**The conjunctiva contains two types of glands, Mucin secretory glands and accessory lacrimal glands.**

**Mucin secretory glands are 1. crypts of Henle present in the tarsal conjunctiva. and 2. glands of Manz found in limbal conjunctiva.**

**Accessory lacrimal glands are: 1. Glands of Krause present in fornix, and 2. Glands of Wolfring present along the upper border of superior tarsus and along the lower border of inferior tarsus. Glands of Zeis is seen in lid margin near to eye lashes.**

## MCQs- Anatomy and Physiology

33. Angle kappa—angle between the visual axis and
- A. Optical axis
  - B. Fixation axis
  - C. Central pupillary line ✓
  - D. None
34. Which of the following is not an intrinsic muscle in eye
- A. Sphincter pupillae
  - B. Dilator pupillae
  - C. Ciliary muscle
  - D. Inferior oblique ✓
35. Hyaluronic acid is found in ?
- a. Vitreous humor ✓
  - b. Synovial fluid
  - c. Cartilage
  - d. Cornea
36. Not a part of middle vascular coat of the eye
- A. Iris
  - B. Choroid
  - C. Ciliary body
  - D. Lamina cribrosa ✓
37. Strongest layer in cornea?
- a. Bowman's layer
  - b. Stroma
  - c. Descemet's membrane ✓
  - d. Endothelium
38. Corneal metabolism depends on oxygen derived predominantly from:
- a) Aqueous humor.
  - b) Atmosphere. ✓
  - c) Iris.
  - d) Limbal vasculature.
  - e) Tear film.
39. The lens derives most of its energy from:
- a) Anerobic glycolysis ✓
  - b) Hexose monophosphate pathway.
  - c) Oxidation of lipids.
  - d) Oxidation of amino acids.

## MCQs- Anatomy and Physiology

40. What is regarded as the vascular tunic of the eye?

- a) Cornea b) sclera c) conjunctiva d) choroid ✓

**the three tunics of eye are:**

**(1) A fibrous tunic, consisting of the sclera behind and the cornea in front;**

**(2) a vascular pigmented tunic, comprising, from behind forward, the choroid, ciliary body, and iris**

**(3) a nervous tunic, the retina.**

41. Which layer is found under the epithelium?

- a) Bowman ✓  
b) endothelium  
c) stroma  
d) descemet

**between the corneal stroma and Descemet's membrane, a new layer was discovered recently, it is known as Dua's layer.**

42. 90% of the cornea thickness is mainly by

- a) Descemet b) stroma ✓ c) epithelium d) endothelium

**Thickest layer is stroma, strongest layer is descemet's membrane, Bowman's membrane is the layer that doesn't regenerate.**

43. Refractive index of the cornea is

- a) 1.33 b) 1.36 c) 1.37 ✓ d) 1.38

**Refractive index of cornea is 1.376**

**Refractive index of aqueous humour is 1.33**

43. The junction of cornea and sclera is known as

- a. Trabecular meshwork  
b. ciliary body  
c. pupil  
d. Limbus ✓

44. What gives white colour to eyes

- A. Conjunctiva  
B. Cornea  
C. Sclera ✓  
D. Choroid

## MCQs- Anatomy and Physiology

45. nasolacrimal duct opens into

- A. Superior meatus
- B. Middle meatus
- C. Inferior meatus ✓
- D. None

46. The avascular structure of eye is

- a. choroid
- b. lens ✓**
- c. conjunctiva
- d. ciliary body

47. Aqueous humour is secreted by

- a. angle of anterior chamber
- b. choroid
- c. ciliary body ✓**
- d. iris

48. Visible spectrum extends from

- a. 100-300 nm
- b. 300-650 nm
- c. 400-700 nm ✓
- d. 720-920 nm

49. Vortex vein drain

- a. iris and ciliary body
- b. sclera
- c. uveal tract ✓
- d. retina

50. All of the following are part of uvea except:

- a. Pars plicata
- b. Pars plana
- c. Choroid
- d. Schwalbe's line ✓**

83. Lens develops from

- a. neural ectoderm
- b. surface ectoderm ✓**
- c. optic vesicle
- d. all of the above

## MCQs- Anatomy and Physiology

84. Retina develops from

- a. surface ectoderm
- b. mesoderm
- c. optic vesicle ✓**
- d. embryonic fissure

53. Tarsal plate is situated in

- a. eyebrow
- b. eyelid ✓**
- c. lacrimal apparatus
- d. conjunctiva

54. Between epithelium and stroma of cornea lies

- a. Bowman's membrane ✓**
- b. Descemet's membrane
- c. endothelium
- d. none of the above

55. Lamina cribrosa is present in

- a. choroid
- b. ciliary body
- c. sclera ✓**
- d. retina

56. Suspensory ligament extends between lens and

- a. iris
- b. ciliary body ✓**
- c. choroid
- d. limbus

57. Which one of the following is not a true basement membrane?

- A) Descemet membrane
- B) Bruch's membrane
- C) Lens capsule
- D) Bowman membrane ✓**

58. Which structure divides the lacrimal gland into two lobes?

- A) Orbicularis oculi
- B) Tarsus
- C) Whitnall ligament
- D) Levator aponeurosis ✓**

## MCQs- Anatomy and Physiology

81. The approximate volume of the orbit is:

- a. 60mL b. 10mL c. **30mL** ✓ d. 45mL

60. The intraorbital length of the optic nerve is

- a. 1 mm b. 5 mm c. 10 mm d. **25 mm** ✓

61. The neuron of the 1st order in the visual pathway lies in which layer of retina

- a. inner plexiform  
b. outer plexiform  
c. optic nerve fibre  
d. none of the above ✓

62. The nature of tears is

- A. Acidic  
**B. Alkaline** ✓  
C. Neutral  
D. None

**A pH of 7 is neutral. Less than that is acidic and more than that is alkaline. Tear is slightly alkaline**

63. Blood supply to lens

- A. Long Posterior Ciliary Arteries  
B. Short Posterior Ciliary Arteries  
C. Ophthalmic artery  
**D. None** (Lens is avascular) ✓

64. Innermost nuclear zone of lens

- A. Embryonic** ✓  
B. Fetal  
C. Infantile  
D. Adult

**Above options are the four nuclear zones of lens. Innermost is embryonic, after that fetal then infantile and outer adult.**

65. Approximately Volume of vitreous in ml

- A. 2.5  
**B. 4.4** ✓  
C. 6.5  
D. 30

## MCQs- Anatomy and Physiology

66. Main portion of Aqueous humor is formed by

- A. Active transfer ✓**
- B. Ultrafiltration
- C. Diffusion
- D. None

**Aqueous humor is formed by**

- A. Active transfer (secretion) (70%)**
- B. Ultrafiltration (20%)**
- C. Diffusion (10%)**

67. Lens capsule is thickest at

- A. Posterior pole
- B. Anterior pole
- C. Equatorial region
- D. Para equatorial region ✓**

**Capsule is thinnest at posterior pole**

68. Y shaped sutures are present in

- A. Embryonic nucleus
- B. Fetal nucleus ✓**
- C. Infantile nucleus
- D. Adult nucleus

**There are two Y sutures in fetal nucleus of lens**

69. Thinnest wall of orbit is

- A. Medial ✓**
- B. Lateral
- C. Inferior
- D. Superior

**Thickest wall is lateral**

70. Minor arterial circle is present on

- A. Pupillary border
- B. Collarette ✓**
- C. Within the iris stroma
- D. At the root of iris

**Embryological remnant near the collarette known as minor arterial circle.**

**Collarette divides iris into central pupillary zone and peripheral ciliary zone**

**Major arterial circle is present in the root of iris.**

## MCQs- Anatomy and Physiology

71. Lamina fusca is a part of

- A. Cornea B. Iris **C. Sclera** ✓ D. Retina

**Lamina fusca is thin layer of pigmented connective tissue on the inner surface of the sclera of the eye, connecting it with the choroid**

72. Which tear layer contains immunoglobulin A?

- A) Mucin layer  
B) Lipid layer  
**C) Aqueous layer** ✓  
D) Glycoprotein layer

**IgA is secreted into the lumen of the main and accessory lacrimal glands, which form the aqueous layer. It plays a role in host-defense mechanisms.**

73. Which one of the following contributes to the aqueous layer of the tear film?

- A) Glands of Wolfring** ✓  
B) Glands of Zeis  
C) Goblet cells  
D) Meibomian gland

**The aqueous component of the tear film is secreted by the main lacrimal gland, glands of Krause, and glands of Wolfring. The goblet cells secrete the mucin layer. The meibomian glands secrete the lipid layer with some contribution from the sebaceous glands of Zeis.**

74. Which bone is not part of the medial orbital wall?

- A) Maxilla  
B) Sphenoid  
**C) Zygomatic** ✓  
D) Ethmoid

**The medial orbital wall is formed from the following four bones: frontal process of the maxilla, lacrimal bone, orbital plate of the ethmoid, and the lesser wing of the sphenoid.**

75. Which structure does not pass through the superior orbital fissure?

- A) Ophthalmic artery** ✓  
B) Frontal nerve  
C) CN III  
D) CN IV

**The superior orbital fissure transmits the lacrimal nerve, frontal nerve, CN IV, and superior ophthalmic vein outside the annulus of Zinn. Within the annulus of Zinn, the superior orbital fissure transmits CN III, nasociliary nerve, sympathetic roots of ciliary ganglion, and CN VI. The ophthalmic artery travels with the optic nerve and the sympathetic fibers from the carotid plexus in the optic foramen.**

## MCQs- Colour vision

1. Human colour vision is
- A. Monochromatic
  - B. Deuchromatic
  - C. Trichromatic ✓
  - D. None

**Human colour vision is trichromatic, with 3 classes of cones responsible for 3 types of wavelength (colour). All colours we see are mixture of these three colours. An individual with normal colour vision is known as trichromate.**

2. Protanopia is
- A. Red deficiency ✓
  - B. Green deficiency
  - C. Blue deficiency
  - D. Red- green deficiency
3. Most common colour vision deficiency
- A. Red-green ✓
  - B. Blue-yellow
  - C. Blue-green
  - D. Total colour blindness
4. Red-green colour vision deficiency affect
- A. Females more
  - B. Males more ✓
  - C. Equal
  - D. Children more
5. Treatment option for congenital colour blindness
- A. Tinted glasses
  - B. Tinted contact lens
  - C. Both
  - D. None ✓

**No treatment is available for congenital color blindness. Tinted lenses and contact lens may enhance the perception of certain shades for specific tasks, but it is not considered as treatment.**

6. Rod monochromatism is characterized by:
- A. Total colour blindness
  - B. Day blindness
  - C. Nystagmus
  - D. All ✓

## MCQs- Colour vision

7. Colour vision deficiency associated with central serous retinopathy (CSR)

- A. Red-green deficiency
- B. Blue-yellow deficiency ✓
- C. Blue cone monochromatism
- D. None

**Acquired Blue-yellow impairment is seen in retinal lesions such as CSR, macular oedema and shallow retinal detachment.**

8. Colour vision deficiency associated with Optic neuritis

- A. Red-green deficiency ✓
- B. Blue-yellow deficiency
- C. Blue cone monochromatism
- D. None

**Acquired Red-green deficiency is seen in optic nerve lesions such as optic neuritis, Leber's optic atrophy and compression of the optic nerve.**

9. Nagel's anomaloscope is used for evaluation of

- A. Colour vision ✓
- B. Contrast sensitivity
- C. Diplopia
- D. Visualisation of Angle of AC

10. Hardy-Rand-Rittler plates (HRR) are used for evaluation of

- A. Colour vision ✓
- B. Contrast sensitivity
- C. Diplopia
- D. Visualisation of Angle of AC

**Hardy-Rand-Rittler plates (HRR) are more sensitive than Ishihara since it can detect all the three congenital defects.**

11. When all the three types of cones are stimulated equally and simultaneously, the color perceived will be:

- a) Black.
- b) Brown.
- c) Orange.
- d) White. ✓

12. In which colour ranges do the three pigments in the retina have their major sensitivities?

- A. green, red and blue. ✓
- B. red, blue and yellow.
- C. green, yellow and red.
- D. green, yellow and blue.

## MCQs- Colour vision

13. The normal trichromatic colour vision consists of following colours

- a. red, blue, yellow
- b. red, blue, green ✓
- c. red, blue, white
- d. red, green, yellow

14. The trichromatic theory of colour vision has been propounded by

- a. Schiotz
- b. von Graefe
- c. Young-Helmholtz ✓
- d. none of the above

15. Retinal cells responsible for colour vision

- A. Cones ✓
- B. Rods
- C. Ganglion cells
- D. Bipolar cells

## MCQs- Optics and Refraction

1. Total hypermetropia is
- A. Facultative + absolute
  - B. Manifest + Latent ✓
  - C. Manifest + absolute
  - D. Absolute + latent

**Total hypermetropia = Manifest (Facultative + absolute) + Latent**

2. Primary angle closure glaucoma is a complication of
- A. Myopia
  - B. Hypermetropia ✓
  - C. Astigmatism
  - D. Presbyopia

3. Maddox V test is used in diagnosis of
- A. Heterophoria
  - B. Heterotropia
  - C. Astigmatism ✓
  - D. Diplopia

**Astigmatic fan and block test is also known as Maddox V test and is used in diagnosis of astigmatism.**

4. While doing IOL power calculation, change in \_\_\_\_\_ affect more on IOL power
- A. Axial length ✓
  - B. Keratometry reading
  - C. A constant
  - D. Anterior chamber depth

**Remember the formula  $P=A-2.5L-0.9K$**

**A is a constant, L is axial length, K is keratometry reading**

**A change in L affect more because it is multiplied by 2.5**

5. Distance between near point of convergence and far point of convergence is known as
- A. Amplitude of convergence
  - B. Range of convergence ✓
  - C. Proximal convergence
  - D. Voluntary convergence
6. During accommodation, radius of curvature of anterior lens surface
- A. Increase
  - B. Decrease ✓
  - C. Remains same
  - D. None

## MCQs- Optics and Refraction

7. Accommodative esotropia is due to
- A. Myopia
  - B. Hypermetropia ✓
  - C. Astigmatism
  - D. Presbyopia
8. Parasympathomimetic drugs cause
- A. Insufficiency of accommodation
  - B. Spasm of accommodation ✓
  - C. Total loss of accommodation
  - D. None
9. As age increase, the amplitude of accommodation
- A. Increase
  - B. Decrease ✓
  - C. Remains same
  - D. None
10. The convergence is measured in
- A. Prism diopter
  - B. Meter angle
  - C. Both ✓
  - D. None

**Vergence is measured in degrees, prism diopters and meter angle.**

**MA = 1/(target distance in meters)**

**Meter angles (MA) can be converted into prism diopters simply by multiplying it by the interpupillary distance (IPD) in cm: Prism Diopters = IPD (cm) \* MA**

**In emmetropia, accommodation needed to see an object is equal to convergence in meter angle for that object distance.**

11. Symmetric astigmatism is when
- A. The principal meridians in each eye have similar but opposite axes ✓
  - B. The axis is same in both eyes
  - C. Power and axis are same in both eyes
  - D. Two principal meridians are at right angles to one another

**In symmetrical Astigmatism the angle in both eyes will be  $90+x$ ,  $90-x$  form. ie. If one eye axis is  $90+10=100^\circ$  other will be  $90-10=80^\circ$ . Or simply, adding both axis will get  $180^\circ$**

**Eg. If RE  $-1.0x 110^\circ$  and LE  $-1.00x 70^\circ$  it is symmetric.**

**Practically, Most of oblique Astigmatism is seen symmetrical**

## MCQs- Optics and Refraction

12. Consecutive hypermetropia occur when

- A. Surgically overcorrected myopia
- B. Pseudophakia with under correction
- C. Paralysis of accommodation
- D. Both A&B ✓

**Similarly, consecutive myopia occur in surgical over correction of hypermetropia and pseudophakia with over correction.**

13. Functional hypermetropia occur in

- A. Aphakia
- B. Pseudophakia with under correction
- C. Paralysis of accommodation ✓
- D. Acquired cortical sclerosis

14. 1mm increase in radius of curvature of cornea results in

- A. 6D myopia
- B. 6D hypermetropia ✓
- C. 3D myopia
- D. 3D hypermetropia

15. If there is associated exoporia, hypermetropia should be

- A. Under corrected ✓
- B. Over corrected
- C. Fully corrected
- D. None

16. fuchs spots are seen in

- A. Hypermetropia
- B. Myopia ✓
- C. Astigmatism
- D. Aphakia

17. In duochrome test red becomes clear when

- A. Hypermetropia is fully corrected
- B. Hypermetropia is over corrected ✓
- C. Hypermetropia is under corrected
- D. Myopia is over corrected

18. In spectacle prescription, OU represents

- A. Right eye
- B. Left eye
- C. Both eyes ✓
- D. Any eye

## MCQs- Optics and Refraction

19. False regarding astigmatism:

- A. regular astigmatism has the principal meridians at  $90^\circ$  to each other
- B. oblique astigmatism occurs when the principal meridians do not lie at  $90^\circ$  to each other ✓
- C. irregular astigmatism is seen in patients with keratoconus
- D. astigmatic image can not be fully corrected with a spherical lens

20. Test not used in diagnosis of astigmatism

- A. Astigmatic fan
- B. Stenopaec slit
- C. Bagolini striated glasses ✓
- D. Retinoscopy

21. Commonest refractive error is

- A. Myopia
- B. Hypermetropia
- C. Astigmatism ✓
- D. Presbyopia

22. Eye at birth is

- A. Myopic
- B. Hypermetropic ✓
- C. Astigmatic
- D. Emmetropic

23. Esotropia may be associated with

- A. Myopia
- B. Hypermetropia ✓
- C. Astigmatism
- D. Presbyopia

24. Lattice degeneration is seen in:

- A. Myopia ✓
- B. Hypermetropia
- C. Astigmatism
- D. Presbyopia

25. Roving ring scotoma is seen after correction of Aphakia by

- A. Spectacle correction ✓
- B. Contact lens
- C. IOL
- D. Both A&B

## MCQs- Optics and Refraction

26. The nearest point at which small objects can be seen clearly is called

- A. Punctum remotum
- B. Punctum proximum ✓
- C. Amplitude of accommodation
- D. Range of accommodation

27. In pseudophakia there will be \_\_\_\_ Purkinje's images

- A. 4 ✓
- B. 3
- C. 2
- D. 0

28. In aphakia correction using spectacles Image is magnified by approximately

- A. 30% ✓
- B. 7%
- C. 1%
- D. 10%

29. Type of astigmatism commonly seen in surgical aphakia

- A. With the rule
- B. Against the rule ✓
- C. Oblique
- D. Bioblique

30. treatment of choice for correction of aphakia is

- A. Spectacles
- B. Contact lens
- C. Lasik
- D. IOL implantation ✓

31. An increase in axial length of the eye will cause

- A. Myopia ✓
- B. Hypermetropia
- C. Astigmatism
- D. Presbyopia

32. An increase in refractive index of lens will cause

- A. Myopia ✓
- B. Hypermetropia
- C. Astigmatism
- D. Presbyopia

## MCQs- Optics and Refraction

33. An increase in radius of curvature of the cornea cause

- A. Myopia
- B. Hypermetropia ✓
- C. Astigmatism
- D. Presbyopia

**Remember, curvature will decrease when the radius of curvature is increased. Increase in curvature cause myopia and increase in radius of curvature cause hypermetropia**

34. Anterior displacement of the lens cause

- A. Myopia ✓
- B. Hypermetropia
- C. Astigmatism
- D. Presbyopia

35. In pathological myopia optic disc appears

- A. Large ✓
- B. Small
- C. Same size
- D. Any of the above

36. Power of +/- 0.25 cross cylinder is

- A. +0.25DSp/-0.25Dcyl
- B. +0.50DSp/-0.25Dcyl
- C. +0.25DSp/-0.50Dcyl ✓
- D. None of the above

**+0.25DSp/-0.50Dcyl or -0.25DSp/+0.50Dcyl is the power of +/-0.25 cross cylinder  
Similarly, +0.50DSp/-1.00Dcyl or -0.50DSp/+1.00Dcyl is the power of +/-0.5 cross cylinder**

37. In cross cylinder, the handle is attached \_\_\_\_\_ degrees to the power.

- A. 180°
- B. 90°
- C. 45° ✓
- D. None

38. the angle subtended by an object on the nodal point of the reduced eye is known as

- A. Angle alpha
- B. Angle Kappa
- C. Angle gamma
- D. Visual angle ✓

## MCQs- Optics and Refraction

39. At what distance distant direct ophthalmoscopy is performed?

- A. Close to face
- B. 20-25 cm ✓
- C. 1m
- D. 6m

40. When a cycloplegic retinoscopy has been performed using cycloplentolate, how many dioptres should be deducted to compensate the ciliary tone?

- A. 1.00D
- B. 0.75D ✓
- C. 0.50D
- D. 0.00D

**1 D for atropine, 0.75 D for cyclopentolate, 0.5 D for homatropine**

41. Duochrome test is based on

- A. Spherical aberration
- B. Chromatic aberration ✓
- C. Both
- D. None

42. In duochrome test, slightly myopic patient see letters in \_\_\_\_\_ sharper.

- A. Red ✓
- B. Green
- C. Both clear
- D. Both blurred

43. Which of the following is not a cycloplegic drug

- A. atropine
- B. cyclopentolate
- C. homatropine
- D. Pilocarpine ✓

44. While performing retinoscopy with dilated pupil, if central and peripheral shadow seen. It is important to neutralize which shadow?

- A. Central ✓
- B. Peripheral
- C. Both
- D. None

## MCQs- Optics and Refraction

45. If the horizontal meridian is more curved than the vertical meridian, the astigmatism is
- A. With the rule
  - B. Against the rule ✓
  - C. Oblique astigmatism
  - D. Bioblique astigmatism

**With-the-astigmatism-** the vertical meridian is more curved than the horizontal.

**Against-the-rule astigmatism-** the horizontal meridian is more curved than vertical.

**Oblique astigmatism-** the two principal meridians are not the horizontal and vertical though these are at right angles to one another (e.g., 45° and 135°).

**Bioblique astigmatism-** the two principal meridians are not at right angle to each other, e.g., one may be at 30° and the other at 100°.

46. 1% difference in Retinal image size occur if the power difference between two eyes is
- A. 0.5 D ✓
  - B. 1 D
  - C. 2 D
  - D. 5 D

**0.5 D difference between the refractive power of eye cause 1% difference in Retinal image size. Upto 5% difference is well tolerated by brain. Diplopia can occur if Retinal image size difference is more than 5%. That's why anisometropia of more than 2.5 D is important.**

47. If the refractive error in both eyes are equal, the condition is known as
- A. Emmetropia
  - B. Anisometropia
  - C. Isometropia ✓
  - D. Orthophoria

48. If the images projected to the visual cortex from the two retinae are abnormally unequal in size and shape, condition is known as
- A. Anisocoria
  - B. Anisometropia
  - C. aniseikonia ✓
  - D. heterochromia

**Anisocoria-** difference in pupil size

**Anisometropia-** difference in power

**Aniseikonia-** difference in size and shape of retinal image

**Heterochromia-** difference in iris colour

## MCQs- Optics and Refraction

49. When plane mirror retinoscopy is performed at a distance of 1 m (no cycloplegics used); in myopia less than 1D, the movement of reflex will be

- A. With movement ✓
- B. Against movement
- C. No movement
- D. No reflex

**With movement corresponds to hypermetropia, emmetropia and myopia less than 1D**

**Against movement is seen in myopia more than 1D**

**No movement in case of myopia of 1 D**

50. While doing retinoscopy, If the distance between patient and examiner is decreased, the distance correction needed will

- A. Increase ✓
- B. Decrease
- C. Remains same
- D. Become zero

**Distance correction= 1/distance in meter. If distance is 1m, correction needed is 1/1= 1D**

**And if distance is 2/3m correction needed will be 3/2= 1.5 D**

51. A Snellen visual acuity of 20/20 is equivalent to which of the following logMAR values?

- a. 1.00
- b. 0.00 ✓
- c. 10.00
- d. 0.10

**logmar value of 6/6 vision is 0.0, but decimal value of 6/6 vision is 1.0, and logmar value of 6/60 vision is also 1.0**

52. Refractive power of anterior corneal surface is

- a. 53 D
- b. 48 D ✓
- c. 43 D
- d. 38 D

**We know power of cornea is +43D, but power of anterior corneal surface is +48D and posterior corneal surface -5.0 D so totally power of cornea is +43D**

53. Far point of myopic eye is

- a. Behind the retina
- b. On the retina
- c. In Front of the retina
- d. In Front of the cornea ✓

**We know parallel rays of light focus in front of retina in myopic eye. But far point of myopic eye is a finite point in front of the cornea, that's why myopes see near without accommodation.**

## MCQs- Optics and Refraction

54. Dynamic Retinoscopy gives an objective refraction for

- a. Near vision ✓
- b. Distance vision
- c. Both
- d. None

55. Skiascopy is another name for

- a. Distant direct ophthalmoscopy
- b. Retinoscopy ✓
- c. Perimetry
- d. Gonioscopy

56. Types of regular astigmatism are

(I). Simple astigmatism (II). Compound astigmatism (III). Mixed astigmatism

- A. (I)&(II)
- B. (III) only
- C. All the above ✓
- D. None

57. 1mm increase or decrease in radius of curvature is equivalent of how many diopters

- A. 1 D
- B. 3 D
- C. 6 D ✓
- D. 0.5 D

**1mm change in axial length make 3D**

58. Physiological tone of ciliary muscle is

- A. +1 diopters ✓
- B. +3 diopters
- C. +0.5 diopters
- D. +14 diopters

59. Types of manifest hypermetropia are

(I) total (II) facultative (III) absolute (IV) Latent

- A. (I) & (II)
- B. (II) & (III) ✓
- C. (I), (II) & (III)
- D. (II) & (IV)

## MCQs- Optics and Refraction

### Hypermetropia Classification by the action of accommodation

Total Hypermetropia(Ht): It can be found out by abolishing the tone of ciliary muscle by cycloplegics like atropine. Total hypermetropia is classified into two

#### Latent and manifest

1. **Latent Hypermetropia(Hl)**: It is the amount of hypermetropia which is corrected normally by the normal tone of ciliary muscle.
2. **Manifest Hypermetropia(Hm)**: Is made up of two components.  
(A) **Facultative Hypermetropia(Hf)**: It is that part of hypermetropia which can be corrected by the effort of accommodation.  
(B) **Absolute Hypermetropia(Ha)**: Which cannot be overcome by the effort of accommodation.

#### Clinical test to find out different types of manifest hypermetropia:

1. **Manifest Hypermetropia(Hm)**: The strongest convex lens with which the patient can still maintain full distance vision 6/6, indicates manifest hypermetropia.

2. **Absolute Hypermetropia(Ha)**: If the patient can not see 6/6 without a lens then the weakest convex lens that will allow him to read this line indicates absolute hypermetropia.

3. **Facultative Hypermetropia(Hf)**:  $\text{Facultative hypermetropia} = \text{Manifest hypermetropia} - \text{Absolute hypermetropia}$ .

4. **Total Hypermetropia(Ht)**: It can be found out by abolishing the tone of ciliary muscle by cycloplegics like atropine.

**Total hypermetropia = Latent hypermetropia + Manifest hypermetropia (Facultative + Absolute).**

60. Newborn eye is

- A. Hypermetropic ✓
- B. Myopic
- C. Astigmatic
- D. Emmetropic

61. Visual field is largest for which colour

- A. Blue
- B. Green
- C. Red
- D. White ✓

62. Visual field is smallest for which colour

- A. Blue
- B. Green ✓
- C. Red
- D. White

## MCQs- Optics and Refraction

63. How much angle should each letter subtend at the nodal point of the eye at the given distance in the snellen's chart

- A. 1 minutes
- B. 5 minutes ✓
- C. 1 degrees
- D. 5 degrees

64. Image magnification in direct ophthalmoscopy

- A. 5 times
- B. 10 times
- C. 15 times ✓
- D. 20 times

65. In direct ophthalmoscopy the image in a myopic eye is

- A. Smaller
- B. Bigger ✓
- C. Same size
- D. Any of the above

**In myopia distance between nodal point and retina increases, so image appears bigger**

66. Which of the following is true regarding the image formed by a prism?

- a. It is virtual and displaced towards the apex ✓
- b. It is real and displaced towards the apex
- c. It is virtual and displaced towards the base
- d. It is real and displaced towards the base

**The image formed by a prism is erect, virtual and displaced towards the apex of the prism Please note, if asked direction of deviated rays, it's towards the base.**

67. A glass prism (refractive index 1.5) of 20 prism dioptres deviates an incident ray of light through:

- a. 5 degrees
- b. 10 degrees ✓
- c. 20 degrees
- d. 40 degrees

**For a glass prism of refractive index 1.5: Angle of deviation = refracting angle / 2;  $D = a/2$ ; Therefore, 1 prism dioptre power produces an angle of deviation of 0.5 degrees, and a 20-dioptre powered prism deviates light through 10 degrees.**

68. For a convex lens, placing an object inside the first principal focus (F) results in an image that is:

- a. Enlarged, inverted and real
- b. Enlarged, erect and real
- c. Enlarged, inverted and virtual

## MCQs- Optics and Refraction

d. Enlarged, erect and virtual ✓

**In the above position, convex lens act as a magnifying lens.**

69. If a 10-dioptre concave lens is decentered by 2 cm temporally, this will result In a:

- a. 5 prism dioptre base-in prism
- b. 5 prism dioptre base-out prism
- c. 20 prism dioptre base-in prism ✓
- d. 20 prism dioptre base-out prism

**Prismatic power = lens power x decentration (in cm)**

**In convex lens, prism base is in the same direction as the movement of lens, and in concave base will be opposite to the direction of decentralisation.**

70. Which colour of light deviates maximum in the dispersion of white light by prism?

- a. Violet ✓
- b. Blue
- c. Green
- d. Red

**Please note Wavelength is inversely proportional to the deviation, Red light has longer wavelength and thus least deviated.**

71. The image of an object formed by reflection at a plane surface is not:

- a. Erect
- b. Virtual
- c. Real ✓
- d. Laterally inverted

72. The catoptric image formed from which of the following is inverted?

- a. Anterior corneal surface
- b. Posterior corneal surface
- c. Anterior lens surface
- d. Posterior lens surface ✓

**Images formed from the reflecting surfaces of the eye are termed catoptric images. These surfaces are the anterior (I) and posterior (II) corneal surfaces and the anterior (III) and posterior (IV) lens surfaces. Images I, II and III are erect and virtual. Image IV is real and inverted**

73. Hruby lens used for ophthalmoscopy is a?

- a. Convex lens
- b. Concave lens ✓
- c. Cylindrical lens
- d. None

**Hruby lens is a Plano-concave lens with dioptric power of -58.6D**

## MCQs- Optics and Refraction

74. Total internal reflection occurs if the incident ray strikes the interface of media at:

- a. An angle less than the critical angle
- b. The critical angle
- c. An angle greater than the critical angle ✓
- d. 90 degrees

75. An object located between the centre of curvature and principal focus of a concave mirror is:

- a. Diminished
- b. Virtual
- c. Erect
- d. Real ✓

**between the centre of curvature and principal focus of a concave mirror image is real, enlarged, inverted and lies outside the centre of curvature.**

76. If undilated retinoscopy is done at a distance of 1/2m, Distance correction needed is

- A. 0.5 D
- B. 1.0 D
- C. 1.5 D
- D. 2.0 D ✓

**Distance Correction needed =  $1/w.d$**

**If working distance is 2/3m correction needed will be  $3/2=1.5D$**

**If it is 1/2m =correction 2D**

77. In cycloplegic retinoscopy using 1%atropine, the amount of diopters deducted to compensate ciliary muscle tone is

- A. 0 D
- B. 0.5 D
- C. 1 D ✓
- D. 1.5 D

78. In a patient with dilated pupils, if central and peripheral shadow movements are different, it is important to neutralize

- A. Central shadow ✓
- B. Peripheral shadow
- C. Both the shadows
- D. None

79. \_\_\_\_\_ is also known as dry retinoscopy

- A. Cycloplegic retinoscopy
- B. Non cycloplegic retinoscopy ✓
- C. Dynamic retinoscopy
- D. Autorefractometry

## MCQs- Optics and Refraction

80. In retinoscopy, Use of cycloplegic drugs are contraindicated in patients with \_\_\_\_\_

- A. Primary open angle glaucoma
- B. Primary angle closure glaucoma ✓
- C. Cataract
- D. Spasm of Accommodation

81. The refractive condition where 1 point of focus falls on the retina and the other point of focus falls in front of the retina

- A. Simple myopic astigmatism ✓
- B. Compound myopic astigmatism
- C. Simple hypermetropic astigmatism
- D. Compound hypermetropic astigmatism

82. A refractive condition in which rays of light come to 2 focal points is correctable with

- A. Spherical lens
- B. Cylindrical lens ✓
- C. Prism
- D. None

83. Which of the following is the best term that implies perfect vision?

- A. Ametropia
- B. Emmetropia ✓
- C. Isometropia
- D. Orthophoria

84. Retinoscopy is

- A. Visualization of retina alone
- B. Visualization of retina and all other posterior segment contents
- C. Objective measurement of the refractive error of patient ✓
- D. Subjective measurement of the refractive error of patient

85. What is the most common refractive error of the human eye?

- A. Myopia
- B. Hypermetropia
- C. Astigmatism ✓
- D. Presbyopia

86. Javal's rule is used to estimate which type of Refractive error?

- a. Myopia
- b. Hypermetropia
- c. Astigmatism ✓
- d. Presbyopia

## MCQs- Optics and Refraction

Javal's rule and Grosvenor's simplification of it are commonly used formulas for predicting spectacle astigmatism from keratometric measurements. In 1890, Javal proposed a rule that predicted the total astigmatism of the eye based on the corneal astigmatism.

Javal's rule states:  $A_t = k + p(A_c)$  Where  $A_t$  is the total astigmatism and  $A_c$  is the corneal astigmatism. The terms  $k$  and  $p$  are constants approximated by 0.5 and 1.25, respectively.

Grosvenor, Quintero and Perrigin suggested a simplification of Javal's rule and proposed a simplified Javal's rule of  $A_t = A_c - 0.5 \times 90^\circ$

87. Temporal crescent is seen typically in

- a. astigmatism
- b. hypermetropia
- c. myopia ✓
- d. none of the above

88. Optical condition of the eye in which the refraction of the two eyes differs is

- a. Isometropia
- b. Anisocoria
- c. anisometropia ✓
- d. compound astigmatism

89. Out of the following which is the shortest acting mydriatic

- a. tropicamide ✓
- b. homatropine
- c. cyclopentolate
- d. atropine

90. People with which type refractive error are at high risk for PACG

- a. Myopia
- b. Hypermetropia ✓
- c. Astigmatism
- d. Presbyopia

91. Placido's Disc may be used in all except

- A. Regular Astigmatism
- B. Keratoconus
- C. Keratometry ✓
- D. Corneal aberrations

**In regular corneal astigmatism the circle will be seen as oval. In keratoconus the concentric circles are seen distorted. Placido's disc is also used to differentiate corneal opacity from aberrations.**

## MCQs- Optics and Refraction

Ordinary Placido's disc is not used for keratometry, but modern Placido's disc based instruments use Scheimpflug technology for corneal topography. The Galilei Dual Scheimpflug Analyzer used for corneal topography is a noncontact instrument composed of a placido-disc topographer and a dual rotating Scheimpflug camera.

92. The total refractive power of the aphakic eye is

- A. 38D
- B. 43D ✓
- C. 60D
- D. 20D

**In an aphakic eye the only refractive surface is cornea.**

93. Retinal image size in uncorrected hypermetropic eye is

- A. Big
- B. Small ✓
- C. Normal
- D. None

**Since hyperopic eye is small, retina is close to nodal point. So image size will be small.**

94. Power of lens with 10cm focal length

- A. 1/10D
- B. 1D
- C. 10D ✓
- D. 100D

**$D=1/f$ , but remember f should be in meter.**

95. Water silk appearance in retina is seen in

- A. Pathological myopia
- B. Simple myopia
- C. Hypermetropia ✓
- D. High astigmatism

96. Lens with a long focal length is

- A. Thick
- B. Thin
- C. Not strongly curved
- D. Both B and C ✓

97. Test not used in astigmatism

- A. Stenopaedic slit
- B. Maddox V
- C. Jackson's cross cylinder
- D. Bagolini striated glasses ✓

## MCQs- Optics and Refraction

98. Total internal reflection occur when a ray of light passes from

- A. Denser medium to rarer medium ✓
- B. Rarer medium to denser medium
- C. One medium to another of same refractive index
- D. None

99. Stiles-Crawford effect is more sensitivity of the retina to

- A. Perpendicular rays than the oblique rays ✓
- B. Bright ight than dim light
- C. Bright colours than dull colours
- D. Quick movement than slow movement

**Stiles-Crawford effect is a natural mechanism to reduce optical abberations in human eye.**

Other mechanisms include

Cutting off of the peripheral rays by iris,

High refractive index of the nucleus of the lens than that of the cortex,

Low sensitivity of the peripheral retina,

Oval shape of the eye ball etc

100. Anisometropia up to how much Diopters is well tolerated

- A. 0.5 D
- B. 1.0 D
- C. 2.5 D ✓
- D. 5.0 D

**0.5 D difference between the power causes 1% difference in retinal image size. Upto 5% difference is easily tolerated by brain. More than that may cause diplopia.**

101. Wavelength is best defined as:

- a. One complete oscillation
- b. The maximum displacement of an imaginary particle on the wave from the baseline
- c. The distance between two symmetrical parts of the wave motion ✓
- d. Any portion of a cycle

> One complete oscillation refers to a **cycle** .

> maximum displacement of an imaginary particle on the wave from the baseline is **amplitude**.

> Any portion of a cycle is called a **phase**

102 Destructive interference is seen in:

- a. Corneal epithelium
- b. Refraction
- c. Antireflective lens coatings ✓
- d. Photochromic lenses

## MCQs- Optics and Refraction

If two waves with the same amplitude are half a cycle out of phase, they cancel each other out, which is termed destructive interference.

In low reflection lens coatings, light reflected from the superficial layer and that from the deep surface cancel each other out, reducing reflectance.  
The corneal stroma, collagen bundles are spaced in order to minimise transmission of any deviated light as this is eliminated by destructive interference.

Photochromic lenses change their transmission characteristics based on the intensity of incident light and do not use the principle of interference.

103. Which of the following is not a test of stereoacuity?

- a. Titrnus
- b. Frisby
- c. Pelli-Robson ✓
- d. TNO

104. power of a lens with focal length 10cm?

- a. 10D ✓
- b. 1/10D
- c. 1D
- d. 100D

**Use formula  $D=1/f$**

105. The unit of illuminance is:

- a. Lumen
- b. Lux (lumen per square metre) ✓
- c. Candelas (lumen per steradian)
- d. Watts per steradian

**Lumen is the unit for luminous flux,  
candelas (lumen per steradian) for  
luminous intensity and  
Watts per steradian for radiant intensity.**

106. The spherical equivalent of a lens with power +3.00 DS/-2.00 DC is:

- a. +1.00 DS
- b. +2.00 DS ✓
- c. -5.00 DS
- d. -1.00 DS

**Spherical equivalent = sph+ cyl/2**

## MCQs- Optics and Refraction

107. Transpose the power -4.0DS/-3.00 DC x 45

- a. -4.00 DS/+3.00 DC x 135
- b. +4.00 DS/-3.00 DC x 135
- c. -7.00 DS/+3.00 DC x 135 ✓
- d. -7.00 DS/-3.00 DC x 135

108. Transpose +1.00 DS/+1.00 DC x 90 to toric formula with base curve -2 D:

a. +3.00 DS

-----

-2.00 DC x 180/-3.00 DC x 90

b. + 4.00 DS

-----

-2.00 DC x 90/-3.00 DC x 180 ✓

c. +3.00 DS

-----

-2.00 DC x 90/-1.00 DC x 180

d. +1.00 DS

-----

-2.00 DC x 90/-3.00 DC x 180

109. The power -2.00DS/+1.5DC x 75 is

- a. Simple myopic astigmatism
- b. Compound myopic astigmatism ✓
- c. Compound hypermetropic astigmatism
- d. Mixed astigmatism

**If sph and cyl with different sign and cyl less than sph, it should be transposed first. The above power becomes -0.5DS/-1.50DC 165**

**Mixed astigmatism occurs only if sph and cyl with different sign and cyl more than sph (eg -1.5DS/+2.0DC 90)**

110. Which of the following is not a problem with spectacle correction of aphakia?

- a. Image magnification
- b. Ring scotoma
- c. Pin-cushion distortion
- d. Barrel distortion ✓

**Barrel distortion occurs with high minus lenses**

111. infants are born with

- A. Myopia
- B. Hypermetropia ✓
- C. Astigmatism
- D. Emmetropia

## MCQs- Optics and Refraction

112. Simple myopia usually does not exceed

- A. 9D
- B. 3D
- C. 6D ✓
- D. 12D

113. Which of the following is degenerative myopia

- A. Congenital
- B. Simple
- C. Pathological ✓
- D. All

114. refractive esotropia is seen commonly in

- A. Myopia
- B. Hypermetropia ✓
- C. Astigmatism
- D. Presbyopia

115. Radial keratotomy is used to correct

- A. Myopia ✓
- B. Hypermetropia
- C. Astigmatism
- D. Presbyopia

116. In compound hypermetropic astigmatism

- a. both the foci are in front of retina
- b. both the foci are behind the retina ✓
- c. one focus is in front and one focus is behind the retina
- d. none of the above

117. The complications of myopia include all EXCEPT

- a. vitreous degeneration
- b. retinal detachment
- c. cataract
- d. closed angle glaucoma ✓

118. the far point of a myopic eye is

- a. Infront of the Corneal plane ✓
- b. On the corneal plane
- c. Behind the retina
- d. At infinity

## MCQs- Optics and Refraction

119. In the absence of lens accommodation, a myopic eye focuses images:

- a. in front of the lens
- b. In front of the retina ✓
- c. behind the retina
- d. Behind the cornea

120. Which of the following is a risk factor for retinal detachment?

- a. black race
- b. male sex
- c. Hypermetropia
- d. myopia ✓

121. At 6m distance from the patient, the 6/6 letters shall subtend an angle of \_\_\_\_\_ in the eye .

- a. 1 minutes of arc
- b. 1 degree
- c. 5 minutes of arc ✓
- d. 5 degrees

122. A person standing in front of mirror finds his image larger than himself. This implies that the mirror is :

- a) Convex
- b) Concave ✓
- c) Plane
- d) Parabolic

123. Retinoscopy on a -2.00D myope at 2/3 meters, neutralization occurs with power

- a. -0.5D ✓
- b. -1.0D
- c. 0.0D
- d. +0.5D

124. The refractive error associated with senile Nuclear cataract

- a. Hypermetropia
- b. Myopia ✓
- c. Astigmatism
- d. Presbyopia

125. Snellens chart is based on what type of visual acuity?

- A. Min. visible
- B. Min. resolution ✓
- C. Vernier acuity
- D. All of the above

## MCQs- Optics and Refraction

126. A X8 loupe has an equivalent power of \_\_\_\_\_ dioptries.

- A) 2
- B) 8
- C) 16
- D) 32✓

**Magnification of a lens is 1/4th of power, 4D lens has magnification of 1X. Similarly power of 8X lens will be  $8 \times 4 = 32D$**

127. A decentration of 10 mm from the optical centre of a +5 dioptre lens produces a prismatic effect of \_\_\_\_\_ prism dioptries.

- A) 0.5
- B) 5✓
- C) 10
- D) 50

**Prentice's Rule  $\Delta = cD$  This equation can be used to calculate the prism induced by decentration. Prentice's rule states that prism in diopters ( $\Delta$ ) is equal to the decentration distance (c) in centimeters multiplied by the lens power (D).**

128. The refracting power of a cylindrical lens is at \_\_\_\_\_ degrees to the axis.

- A) 45
- B) 90✓
- C) 180
- D) 360

129. The image produced by a negative lens will not be \_\_\_\_\_ .

- A) real✓
- B) diminished in size
- C) erect
- D) virtual

**The image produced by convex mirror and concave lens are always virtual**

130. One prism dioptre ( $\Delta$ ) produces displacement of an object by \_\_\_\_\_.

- A) 1mm
- B) 1cm✓
- C) 10cm
- D) 1m

131. The image formed by a plane mirror is always

- A. Real and erect
- B. Virtual and erect✓
- C. Real and inverted
- D. Virtual and inverted

## MCQs- Optics and Refraction

132. A convex lens acts as a magnifying lens if the object is placed .....

- A. Between Focus(F) and optical centre of lens ✓
- B. Between focus(F) and centre of curvature (2F)
- C. Beyond centre of curvature ( 2F)
- D. Anywhere

133. SI unit of power of a lens is

- A. Diopter ✓
- B. Snellen
- C. Meter
- D. cm

134. 1 D is a power of lens having focal length

- A. 100 cm ✓✓
- B. 10 cm
- C. 1 cm
- D. 1/10 cm

135. Real images formed by a single convex lens is always .....

- A. On the same side of the lens as the object
- B. Inverted ✓
- C. Erect
- D. Smaller than the object

136. Visual acuity recorded by Snellen's test chart is a measure of

- A. Light sense
- B. Form sense ✓
- C. Contrast sense
- D. All

137. Subdivision of visual acuity for hyperacuity

- A. Minimum visible
- B. Minimum resolvable
- C. Minimum discriminable ✓
- D. None

**Three subdivisions of visual acuity are:**

- **Minimum visible-detection of the presence of a visual stimulus.**
- **Minimum resolvable-ordinary visual acuity.**
- **Minimum discernible-hyperacuity.**

## MCQs- Optics and Refraction

138. unit of luminous flux

- A. Lux
- B. Lumens ✓
- C. Lambert
- D. Foot candles

**Lux is unit of illuminance, the total amount of light that falls on a surface**

**Lumens is unit of luminous flux, the total amount of light emitted in all directions.**

**Lambert is one lumen per square cm.**

**Foot candle is one lumen per square foot.**

139. Hemeralopia is

- A. Inability to see clearly in dim light
- B. Inability to see clearly in bright light ✓
- C. Inability to see colour
- D. Difficulty to read words

***Nyctalopia- Night Blindness***

***Hemeralopia- inability to see clearly in bright light***

***Achromatopsia- colour blindness***

***Word Blindness- dyslexia***

***hemianopia- blindness in half field of vision***

***Amblyopia- lazy eye***

140. Amblyopia can occur in all except

- A. Unilateral high myopia
- B. Unilateral high hypermetropia
- C. Unilateral high astigmatism
- D. Unilateral aphakia ✓

**Aphakia is most commonly acquired, it will not cause amblyopia. Congenital aphakia can cause amblyopia, but it is a very rare condition.**

141. All are causes of irregular astigmatism except

- a. Pterygium
- b. Keratoconus
- c. Corneal scarring
- d. Cataract surgery ✓

**Post operative astigmatism is usually regular**

142. False regarding aphakia

- a. High hypermetropia
- b. Shallow anterior chamber ✓
- c. Complete loss of accommodation
- d. Iridodonesis

## MCQs- Optics and Refraction

### Signs of aphakia

Limbal scar in surgical aphakia

Anterior chamber is deeper.

Iridodonesis - tremulousness of iris

Pupil is jet black in colour.

Purkinje's image test shows only two images (normally four).

Refraction reveals high hypermetropia.

143. Temporal crescent is seen typically in

- a. astigmatism
- b. hypermetropia
- c. myopia ✓
- d. none of the above

144. Blurring of vision for near work occurs in

- a. hypermetropia
- b. presbyopia
- c. both of the above ✓
- d. none of the above

**Hypermetropes will accommodate for distance to see clearly. So, excessive accommodation is needed for NV, that causes difficulty and blurring in near vision, especially in high hypermetropes. That's why hypermetropia is known as long sightedness.**

145. Optical conditions of aphakia include all EXCEPT

- a. loss of accommodation
- b. astigmatism with the rule ✓
- c. enlargement of retinal image
- d. Hypermetropia

**Due to pressing of lids in vertical meridian the vertical curvature of cornea will be greater than horizontal. This causes a small astigmatism, resulting power will be -cyl@180 or +cyl@90.**

**-cyl @180 or +cyl@90 is called as with the rule astigmatism.**

**In surgical aphakia, because of the healing of scar vertical meridian becomes more flatter, resulting astigmatism will be +cyl@180. This astigmatism is against the rule.**

146. Unilateral aphakia is best corrected by

- a. contact lens
- b. intraocular lens implant ✓
- c. Spectacles
- d. none

## MCQs- Optics and Refraction

147. Standard power of posterior chamber intraocular lens is

- a. + 20 D ✓
- b. +10 D
- c. + 5 D
- d. + 15 D

148. Cylindrical lenses are prescribed in

- a. presbyopia
- b. astigmatism ✓
- c. myopia
- d. squint

149. A newborn is invariably

- a. hypermetropic ✓
- b. myopic
- c. astigmatic
- d. Presbyopic

150. Astigmatism is mostly a type of

- a. axial ametropia
- b. index ametropia
- c. curvature ametropia ✓
- d. spherical aberration

151. Hypermetropia causes

- a. divergent squint
- b. convergent squint ✓
- c. both of the above
- d. none of the above

152. In retinoscopy using a plane mirror with working distance 1m, when the mirror is tilted to the right the shadow in the pupil moves to the left in

- a. hypermetropia
- b. myopia more than  $-1$  D ✓
- c. emmetropia
- d. myopia less than  $-1$  D

153. Patients with high myopia ( $>6$ D) are at a higher risk of

- a ) Retinal detachment
- b) Macular degeneration
- c) glaucoma
- d) All of the above ✓

## MCQs- Optics and Refraction

154. The bending of a beam of light when it passes obliquely from one medium to another is known as \_\_\_\_\_.

- 1.reflection
- 2.refraction✓
- 3.dispersion
- 4.deviation

155. Ray of light passes without deviation, if pass through

- 1.optical centre
- 2.focus
- 3centre of curvature✓
- 4.pole

156. Convex lens always gives a real image if the object is situated beyond \_\_\_\_\_.

- 1.optical centre
- 2centre of curvature
- 3.focus✓
- 4.radius of curvature

157. Parallel rays of light entering a convex lens always converge to \_\_\_\_\_.

- 1centre of curvature
- 2.the principal focus✓
- 3.optical centre
- 4.the focal plane

158. Where should an object be placed so that a real and inverted image of the same size is obtained, using a convex lens?

- 1.Between O and F
- 2.At F
- 3.At 2 F✓
- 4.At infinity

159. SI unit of the power of a lens is \_\_\_\_\_.

- 1.dioptre✓
- 2.cm
- 3.metre
- 4.watt

160. 1 D is the power of the lens of focal length of \_\_\_\_\_ cm.

- 1.100✓
- 2.10
- 3.1/100
- 4.1/10

## MCQs- Optics and Refraction

161. In a simple microscope lens used is \_\_\_\_\_.

- 1.biconvex✓
- 2.biconcave
- 3.plano convex
- 4.cylindrical

162. Reciprocal of focal length in metres is known as the \_\_\_\_\_ of a lens.

- 1.focus
- 2.power✓
- 3.power of accommodation
- 4.far point

163. A convex lens is called \_\_\_\_\_.

- 1.converging lens✓
- 2.diverging lens
- 3.both converging and diverging lens
- 4.refracting lens

164. A positive magnification greater than unity indicates \_\_\_\_\_.

- 1.real image
- 2.virtual image✓
- 3.neither real nor virtual image
- 4.distorted image

165. The power of a convex lens of focal length 50 cm is \_\_\_\_\_.

- 1.+ 2D✓
- 2.+50D
- 3.+1/50 D
- 4.+0.5D

166. The focal length of a lens whose power is -1.5 D is \_\_\_\_\_.

- 1.-66.66 cm✓
- 2.-3/2 m
- 3.+66.66cm
- 4.-1.5 m

167. Real images formed by single convex lenses are always \_\_\_\_\_.

- 1.on the same side of the lens as the object
- 2.inverted✓
- 3.erect
- 4.smaller than the object

## MCQs- Optics and Refraction

168. An object is placed 12 cm from a convex lens whose focal length is 10 cm. The image must be.

- 1.virtual and enlarged
- 2.virtual and reduced in size
- 3.real and reduced in size
- 4.real and enlarged ✓

169. A concave mirror give real image with same size if positioned at

- A. Infinity
- B. Optical centre
- C. Focus point
- D. Centre of curvature ✓

170. The of AR coating is based on the property

- A. Total internal reflection
- B. Refraction
- C. Diffraction
- D. Interference ✓

172. A standard size (1.2mm) pinhole may correct refractive error upto

- A.1D
- B. 3D ✓
- C. 10D
- D. Any power

178. Types of visual acuity include all except

- A. Minimum visible
- B. Minimum separable
- C. Maximum resolvable ✓
- D. Hyper acuity

179. When correcting hypermetropia, if Plus lens placed away from eye, the required power to correct will be

- A. Lower ✓
- B. Higher
- C. Same
- D. Higher in case of high hypermetropia

**Moving lens away from the eye increases effective plus power**

**In a hyperope, far point is behind eye, Moving lens forward moves its focal point forward.**

**So the Lens is further away from far point of eye, To match far point of eye, we need longer focal length (lower power) plus lens.**

## MCQs- Optics and Refraction

Similarly, Moving lens toward eye decreases effective plus power

The closer the lens is to the eye, the greater the power required to correct the same amount of hyperopia.

To remember this, remember about aphakia, aphakia spectacle correction is around +10D and IOL around +20D

180. Distometer is used for measuring

- A. Visual acuity
- B. Power of lens
- C. Vertex distance ✓
- D. Contrast sensitivity

181. In accommodation, convexity of the lens

- A. Increase
- B. Decrease
- C. No change
- D. None

182. In hypermetropia far point of the eye is

- A. Real and in front of the eye
- B. Virtual and in front of the eye
- C. Real and behind the eye
- D. Virtual and behind the eye ✓

183. Minimum plus correction required for clear vision at distance shows

- A. Total hypermetropia
- B. Absolute hypermetropia
- C. Latent hypermetropia
- B. Manifest hypermetropia

184. Transpose +4.00 +2.00 x 105

- A. +6.00 -2.00 x 105
- B. +2.00 +2.00 x 15
- C. +6.00 -2.00 x 15 ✓
- D. +4.00 -2.00 x 15

185. Spherical equivalent of -1.00 + 2.00 x 135

- A. +1.00
- B. 0.0 ✓
- C. -1.00
- D. +1.5

## MCQs- Optics and Refraction

186. While doing retinoscopy, At the neutralization point, far point of eye is at

- A. Infinity
- B. Behind the eye
- C. Anywhere depending on power of the eye
- D. At the position of retinoscope ✓

**Far point of eye may be at any point depending on the power of the eye, in retinoscopy we are bringing that to the position of retinoscope.**

**Any eye including emmetropic, At the neutralization point the far point will be on the peephole of retinoscope. Or simply, with that neutralizing power eye is intentionally made myopic with far point at position of retinoscope. That is then corrected as distance correction in PMT.**

187. Impact-resistance is less for

- A. Glass ✓
- B. CR39
- C. Polycarbonate
- D. Plastic

188. Arden grating is used for evaluation of

- A. Distance vision
- B. Colour vision
- C. Contrast sensitivity ✓
- D. Diplopia

189. Optokinetic nystagmus test is a

- A. Detection acuity test
- B. Recognition acuity test
- C. Direction identification test
- D. Resolution acuity test ✓

**OKN, PLT, VER etc are Resolution acuity tests**

**Snellen's E and Landolt's broken ring tests are direction identification tests.**

190. Which etiologic type of aniseikonia is easily correctable

- A. Optical aniseikonia ✓
- B. Retinal aniseikonia
- C. Cortical aniseikonia
- D. All are equally easy

191. All are features of convergence spasm except

- A. Intermittent diplopia
- B. Blurring of vision
- C. Mydriasis ✓
- D. Induced myopia

## MCQs- Optics and Refraction

192. Magnification of +40D lens is

- A. 4x
- B. 10x ✓
- C. 20x
- D. 40x

**Magnification=D/4**

193. All are features of image formed by a plane mirror except

- A. Same size
- B. Real ✓
- C. Laterally inverted
- D. Same distance from mirror

**Image is virtual**

194. The Vistech chart is used for evaluation of

- A. Distance vision
- B. Near vision
- C. Colour vision
- D. Contrast sensitivity ✓

195. Best optical treatment option for correcting irregular astigmatism

- A. Spectacles
- B. Contact lens ✓
- C. Intra ocular lens
- D. Polarization lens

196. If axial length is increased, IOL power will

- A. Increase
- B. Decrease ✓
- C. Remain same
- D. None

197. In the hypermetropic eye, the second principal focus lies

- A. Behind the Retina ✓
- B. Infront of the Retina
- C. On the Retina
- D. At infinity

198. The jack-in-the-box phenomenon is observed in Aphakia correction using

- A. Spectacle ✓
- B. Contact lens
- C. IOL
- D. All

## MCQs- Optics and Refraction

199. Transverse keratotomy is used for correcting

- A. Myopia
- B. Hypermetropia
- C. Astigmatism
- D. Presbyopia

200. In retinoscopy, swirling reflex is seen in

- A. High astigmatism
- B. Keratoconus
- C. Aphakia
- D. IOL dislocation

## MCQs- Anterior segment

1. Trachoma is a
- A. Viral infection
  - B. Bacterial infection ✓
  - C. Fungal infection
  - D. Allergic reaction

**Trachoma is a disease caused by bacterium Chlamyida trachomatis which is spread by poor hygiene, contaminated water, and houseflies.**

2. Rupture in the Descemet's membrane seen in
- a. K.conus
  - b. K.globus
  - c. Buphthalmos
  - d. All of the above ✓

3. The pathology of snow blindness involves the
- a. cornea ✓
  - b. iris
  - c. Macula
  - d. optic disc

4. The most diagnosis sign of anterior uveitis is
- A. Aqueous flare
  - B. KPs ✓
  - C. Miosis
  - D. Raised IOP

5. Distichiasis is
- A. An extra row of lashes ✓
  - B. Misalignment of lashes
  - C. Absence of lashes
  - D. White lashes

6. Epidemic keratoconjunctivitis is caused by
- A. dryness
  - B. allergens
  - C. adenovirus ✓
  - D. bacteria Moraxella

**When only the cornea is inflamed, it is called keratitis; when only the conjunctiva is inflamed, it is called conjunctivitis. When both conjunctiva and cornea is inflamed, it is known as keratoconjunctivitis.**

## MCQs- Anterior segment

### Causes of different types of keratoconjunctivitis

**Keratoconjunctivitis sicca - dryness**

**vernal keratoconjunctivitis (VKC) or spring catarrh - allergens**

**Atopic keratoconjunctivitis- atopy**

**Epidemic keratoconjunctivitis- adenovirus**

7. Chalazion is the infection of:

- A. Meibomian gland ✓
- B. Zeis gland
- c. Lacrimal gland
- d. Molls gland

8. Koeppe's nodules are seen on

- A. Lid margin
- B. Pupillary margin ✓
- C. Limbus
- D. Conjunctiva

9. D-shaped pupil occurs in:

- a. Iridocyclitis
- b. Iridodonesis
- c. Cyclodialysis
- d. Iridodialysis ✓

10. Everbusch operation is for

- A. Ptosis ✓
- B. Proptosis
- C. Lagophthalmos
- D. Entropion

11. False regarding pseudo pterygium

- A. Stationary
- B. Seen at any site
- C. Probe cannot be passed ✓
- D. Can occur at any age

12. Abnormal dryness is seen in

- A. Xerophthalmia ✓
- B. Trichiasis
- C. Hordeolum
- D. Pterygium

## MCQs- Anterior segment

13. Satellite nodules in the cornea are caused by
- a. bacteria
  - b. virus
  - c. fungus ✓
  - d. rickettsia

**The presence of satellite lesions strongly suggests a fungal infection**

14. 'Salmon patches' are seen in
- a. haemorrhage into the cornea
  - b. interstitial keratitis ✓
  - c. retinitis pigmentosa
  - d. phlyctenular keratitis

**In Interstitial keratitis (IK) vascular invasion and stromal necrosis cause the pinkish discoloration of corneal tissue called as Salmon patch of Hutchinson**

15. The deposits seen in arcus senilis is
- a. lipid ✓
  - b. calcium
  - c. hyaline
  - d. none of the above

**Arcus senilis is a white or gray opaque ring or arc that develops around the cornea of the eye. The arc or ring that occurs due to lipids (fats) or cholesterol deposit in the cornea.**

16. Cornea is thinned in
- a. keratoconus ✓
  - b. Fuchs' dystrophy
  - c. keratoglobus
  - d. all of the above
17. Band-shaped keratopathy is due to
- a. calcareous degeneration ✓
  - b. hyaline degeneration
  - c. fatty degeneration
  - d. elastotic degeneration
18. Munson's sign is seen in
- a. episcleritis
  - b. chalcosis
  - c. keratoconus ✓
  - d. retinal detachment

## MCQs- Anterior segment

19. Common cause of non-healing corneal ulcer

- a. chronic dacryocystitis
- b. raised intraocular pressure
- c. diabetes mellitus
- d. all of the above ✓

20. The earliest symptom to occur in corneal ulcer is

- a. pain
- b. photophobia ✓
- c. loss of sensation
- d. diminished vision

21. Fascicular ulcer is present in

- a. Mooren's ulcer
- b. neuroparalytic keratitis ✓
- c. herpes zoster
- d. marginal ulcer

22. Rupture of Descemet's membrane is seen in

- a. keratoconus ✓
- b. rubella
- c. glaucoma
- d. retinoblastoma

23. Bullous keratopathy involves

- a. Descemet's membrane
- b. epithelium
- c. endothelium ✓
- d. Bowman's membrane

24. In case of central dense leucoma treatment of choice is

- a. penetrating keratoplasty ✓
- b. lamellar keratoplasty
- c. tattooing
- d. enucleation

25. Ciliary congestion is most marked at the :

- A. sclera
- B. fornix
- C. bulbar conjunctiva
- D. limbus ✓

**Ciliary congestion is most marked at Limbus and conjunctival congestion is most marked in the fornices.**

## MCQs- Anterior segment

26. Which of the following bacteria most commonly involves in acute dacryocystitis?

- A. Staphylococci ✓
- B. Pneumococci
- C. Hemophilus Influenzae
- D. Pseudomonas aeruginosa

27. Cobble stone pappilae are pathogenesis of:

- A. trachoma
- B. inclusion conjunctivitis
- C. vernal conjunctivitis ✓
- D. adenoviral conjunctivitis

**Vernal keratoconjunctivitis (VKC) is also known as spring catarrh**

28. Following bacteria penetrate intact epithelium:

- a) Gonococcus. ✓
- b) Pneumococcus.
- c) Diplococcus.
- d) Tubercle bacillus.
- e) Aspergillus.

**Quick tip** 😊

Organisms Eat the cornea **AS LuNCH**

- \*A\* -Acanthameba (perineural)
- \*S\* -Shigella
- \*L\* -Listeria
- \*N\* -Neisseria (gonorrhoea and meningitis)
- \*C\* -Corynebacteria diphtheria
- \*H\* -Haemophilus aegyptius

29. Resistance to infection inside the eye is low because of:

- a) Low temperature.
- b) High pressure.
- c) No direct blood supply. ✓
- d) Easy metastasis.
- e) Very high metabolism.

30. Herbert's pits are seen on the

- a. lid margin
- b. palpebral conjunctiva
- c. Arlt's line
- d. limbus ✓

## MCQs- Anterior segment

**Acute trachoma is characterized by a follicular conjunctivitis that is usually bilateral and usually more prominent on the superior tarsal conjunctiva. Follicles may also appear at the limbus, and when these heal, they form the pathognomonic cicatricial scars, known as Herbert's pits.**

31. Tranta's spots are noticed in cases of:

- a. Active trachoma
- b. Vernal kerato conjunctivitis ✓
- c. Corneal phlycten
- d. Vitamin A deficiency

**Bulbar form of VKC is characterised by dusky red triangular congestion of bulbar conjunctiva in palpebral area, gelatinous thickened accumulation of tissue around limbus and presence of discrete whitish raised dots along the limbus known as Tranta's spots.**

32. Organism causing ophthalmia neonatorum is

- a. Neisseria gonorrhoeae ✓
- b. staphylococci
- c. streptococci
- d. Neisseria meningitidis

33. Bitot's spots are associated with

- a. vitamin A deficiency ✓
- b. vitamin D deficiency
- c. vitamin E deficiency
- d. all of the above

**Signs of vitamin A deficiency, as graded by the WHO, are:**

**Night blindness (XN)**

**Conjunctival xerosis (X1A)**

**Bitot's spots (X1B)**

**Corneal xerosis (X2)**

**Corneal ulcer covering less than 1/3 of the cornea (X3A)**

**Corneal ulcer covering at least 1/3 of the cornea, defined as keratomalacia (X3B)**

**Corneal scarring (XS)**

34. Phlyctenular conjunctivitis is due to

- a. pneumococcus
- b. Pseudomonas pyocyanea
- c. allergy to endogenous protein ✓
- d. allergy to exogenous protein

35. Blood vessels in a trachomatous pannus lie

## MCQs- Anterior segment

- a. beneath the Descemet's membrane
- b. in the stroma
- c. between Bowman's membrane and stroma
- d. between Bowman's membrane & epithelium ✓

36. Cobblestone appearance of the conjunctiva is seen in

- a. spring catarrh ✓
- b. angular conjunctivitis
- c. eczematous conjunctivitis
- d. trachoma

37. As a complication of acute mucopurulent conjunctivitis, the corneal ulcers that develop are

- a. marginal ✓
- b. central
- c. anywhere on cornea
- d. no where

38. Pupil is pinpoint in

- a. optic atrophy
- b. absolute glaucoma
- c. atropine
- d. iritis ✓

39. Cogan's syndrome is associated with?

- A. Keratitis ✓
- B. Conjunctivitis
- C. Iritis
- D. Myopia

**Cogan's syndrome is seen in middle aged adults.**

**The features include interstitial keratitis, acute tinnitus, vertigo and deafness.**

**Treatment is by usage of topical and systemic corticosteroids.**

**Early treatment is necessary to prevent permanent deafness and blindness.**

40. Which of the following is seen in Lowe's syndrome?

- A. Glaucoma ✓
- B. Choroiditis
- C. Secondary cataract
- D. Myopia

## MCQs- Anterior segment

**Lowe's syndrome is oculo-cerebro-renal syndrome. It is an inborn error of amino acid metabolism. Congenital cataract and glaucoma are the ocular features. Mental retardation, dwarfism, osteomalacia and muscular hypotonia are the other features seen in this syndrome.**

41. Paralysis of which cranial nerve cause neuroparalytic keratitis

- A. 3rd
- B. 4th
- C. 5th✓
- D. 6th

42. Weiss operation is done for?

- A. Cicatricial entropion
- B. Senile entropion✓
- C. Senile ectropion
- D. Cicatricial ectropion.

43. Hypopyon is seen in

- A. Bacterial Corneal ulcer
- B. Fungal Corneal ulcer
- C. Viral Corneal ulcer
- D. A&B✓

44. Anterior uveitis include all except

- A. Iritis
- B. Iridocyclitis
- C. Anterior cyclitis
- D. Pars planitis✓

45. Abnormally eccentric placed pupil is known as

- A. Iredermia
- B. Corectopia✓
- C. Heterochromia
- D. Polycoria

46. Watery discharge is seen in which conjunctivitis

- A. Bacterial
- B. Viral✓
- C. Chlamydial
- D. All

## MCQs- Anterior segment

47. HSV can be associated with :

- A. Keratitis
- B. Uveitis
- C. Retinitis
- D. All the above ✓

48. Upper eye lid retraction is typically a sign of:

- a. entropion
- b. Ptosis
- c. orbital fracture
- d. thyroid eye disease ✓

49. Ankyloblepharon is

- A. Adhesion of both lid margin ✓
- B. Adhesion of palpebral conjunctiva and bulbar conjunctiva
- C. Double row of lashes
- D. None

50. Iridis circulus major is situated at

- A. Pupil
- B. Ciliary body
- C. Root of iris ✓
- D. Collarette

**Each of the two long ciliary arteries, having reached the attached margin of the iris, divides into an upper and lower branch; these anastomose with corresponding branches from the opposite side and thus encircle the iris; into this vascular circle (Major circulus arteriosus of iris) the anterior ciliary arteries pour their blood, and from it vessels converge to the free margin of the iris, and there communicate and form a second circle (Minor circulus arteriosus of iris).**

51. Substance deposited in Band Shaped Keratopathy is?

- A. calcium phosphate ✓
- B. magnesium phosphate
- C. magnesium sulphate
- D. Iron

52. Corneal nerves are not enlarged in

- A. Keratoconus
- B. Leprosy
- C. Herpes simplex keratitis ✓
- D. Neurofibromatosis

## MCQs- Anterior segment

53. False about Bitot spots is?

- A. accumulation of keratinized epithelial debris
- B. appear on the conjunctiva
- C. appear on the cornea ✓
- D. develop into xerophthalmia if not treated

54. Poliosis is

- A. Double row of lashes
- B. Multiple row of lashes
- C. Whitening of lashes ✓
- D. Absence of lashes

## Other disorders of Lashes

**Hypertrichosis-overgrowth of the lashes**

**Hypotrachosis-lack or absence of the lashes**

**Distichiasis-double row of lashes**

55. Inversion of the lid margin

- A. Entropion ✓
- B. Ectropion
- C. Trichiasis
- D. Ptosis

56. Which of the following entropion type is usually a temporary condition

- A. Senile
- B. Mechanical
- C. Cicatricial
- D. Acute spastic ✓

**Acute spastic is caused by spasm of the orbicularis muscle seen in chronic corneal irritation, prolonged bandaging or essential blepharospasm. It involves mostly the lower lid and is usually a temporary condition**

57. Hyperemia is minimal at

- A. Palpebral conjunctiva
- B. Limbus ✓
- C. Fornices
- D. Equal everywhere

## MCQs- Anterior segment

58. Crede's method is used in treating

- A. Follicular conjunctivitis
- B. Ophthalmia neonatorum ✓
- C. Membranous conjunctivitis
- D. Trachoma

59. Epidemic keratoconjunctivitis (EKC) is caused by

- A. Fungus
- B. Adenovirus ✓
- C. Chlamydia
- D. Allergies

60. Common causative organism of Acute serpiginous ulcer (Ulcus serpens)

- A. Staphylococcus
- B. Enterococcus
- C. Gonococcus
- D. Pneumococci ✓

**Another name of Pneumococci is Streptococcus pneumoniae**

## MCQs- Cataract

1. Most common type cataract in adults

- A. Nuclear
- B. Cortical✓
- C. Zonular
- D. Morgagnian

**Approximately 70% cortical**

**25% nuclear**

**5% posterior subcapsular**

2. Most common congenital or developmental cataract

- A. Lamellar
- B. Blue Dot✓
- C. Total nuclear
- D. Rubella cataract

**Lamellar is also known as Zonular cataract**

3. Most common congenital or developmental cataract presenting with vision impairment

- A. Blue Dot
- B. Coronary
- C. Lamellar✓
- D. Total nuclear

4. Zonular cataract got the name because

- A. It involves Zonules of Zinn
- B. It involves different zones of lens✓
- C. It involves nucleus of lens
- D. It is bilateral

5. Refractive error associated with Nuclear cataract

- A. Hypermetropia
- B. Myopia✓
- C. Astigmatism
- D. Presbyopia

6. Pigment accumulate in nuclear cataract

- A. Visual pigment
- B. Melanin
- C. Adinochrome
- D. Urochrome✓

## MCQs- Cataract

7. In old age "second sight phenomenon" occur due to

- A. Cataract surgery
- B. Presbyopia
- C. Cortical cataract
- D. Nuclear cataract ✓

**Early nuclear cataract lead to myopia, and presbyopia patients may say the near vision is improved. This is known as second sight.**

8. Iris shadow is seen in which stage of cortical cataract

- A. Incipient stage
- B. Hyper mature stage
- C. Mature stage
- D. Immature stage ✓

9. Sunset syndrome is due to

- A. Night blindness
- B. Immature cataract
- C. Subluxated cataractous lens
- D. Subluxated IOL ✓

10. In bipolar cataract

- A. Both eye anterior polar cataract
- B. Both eye posterior polar cataract
- C. One eye anterior polar and other eye posterior polar
- D. Anterior and posterior polar in same eye ✓

11. In intra capsular cataract extraction, which part of the capsule is left behind

- A. Anterior
- B. Posterior
- C. Both
- D. None ✓

12. Chlorpromazine-induced cataract is

- A. Anterior polar
- B. Posterior polar
- C. Anterior subcapsular ✓
- D. Posterior subcapsular

13. Cataract associated with long-term use of miotics

- A. Anterior polar
- B. Posterior polar
- C. Anterior subcapsular ✓
- D. Posterior subcapsular

## MCQs- Cataract

**Anterior subcapsular granular type of cataract may be associated with long-term use of miotics, particularly long acting cholinesterase inhibitors such as echothiophate, demecarium bromide, disopropyl fluorophosphate (DFP). Removal of the drug may stop progression and occasionally may cause reversal of cataract.**

14. All are causes of posterior subcapsular cataract except

- A. Complicated cataract
- B. Steroid induced cataract
- C. Chlorpromazine cataract ✓
- D. Traumatic cataract

15. Choice of treatment for aphakia

- A. Spectacle
- B. Contact lens
- C. IOL implantation ✓
- D. LASIK

16. Phacotopic glaucoma occur due to

- A. Swollen cataractous lens
- B. Leakage of lens protein
- C. Subluxated or dislocated hypermature lens ✓
- D. Rupture of posterior capsule in ECCE

**Swollen lens- phacomorphic glaucoma**

**Leakage of lens protein- phacolytic glaucoma**

17. Retinal detachment is more common after

- A. ICCE ✓
- B. ECCE
- C. SICS
- D. MICS

18. After cataract will not occur in

- A. ICCE ✓
- B. ECCE
- C. SICS
- D. MICS

19. Post operative astigmatism is more after

- A. ICCE ✓
- B. ECCE
- C. SICS
- D. MICS

## MCQs- Cataract

20. Post operative astigmatism is more commonly
- A. With the rule
  - B. Against the rule ✓
  - C. Oblique
  - D. Bioblique
21. Ring of Sommerring is a type of
- a. congenital cataract
  - b. complicated cataract
  - c. after cataract ✓
  - d. traumatic cataract
22. Rosette-shaped cataract is a feature of
- a. traumatic cataract ✓
  - b. diabetic cataract
  - c. coronary cataract
  - d. complicated cataract
23. Snow flakes cataract is found in cases with
- a. gout
  - b. rheumatoid arthritis
  - c. diabetes mellitus ✓
  - d. hypothyroidism
24. Second sight is seen in
- a. Aphakia
  - b. After cataract
  - c. Senile Nuclear cataract ✓
  - d. Senile Cortical cataract
25. Immature Nuclear cataract changes the refraction of the eye into
- a. Myopia ✓
  - b. Hypermetropia
  - c. Astigmatism
  - d. No change
26. The type of laser used to treat Posterior capsule opacification
- A)Yag laser ✓
  - B)Argon laser
  - C)Diode laser
  - D)Excimer laser

## MCQs- Cataract

27. Most common cause of diminution of vision after ECCE is
- a) Cystoid macular edema
  - b) Posterior capsule opacification ✓
  - c) Corneal decompensation
  - d) Retinal detachment
28. Sun-set syndrome occurs due to
- A) inferior subluxation of IOL ✓
  - B) Nuclear cataract
  - C) dislocation of IOL into vitreous
  - D) Lenticular sclerosis
29. Fincham's test differentiates cataract from:
- A) Retinal detachment
  - B) uveitis
  - C) glaucoma ✓
  - D) diabetic retinopathy
30. Which of the following conditions can cause unocular diplopia
- A) subluxation of IOL
  - B) incipient cataract
  - C) keratoconus
  - D) all the above ✓
31. All are causes of Inherited Ectopia Lentis except
- A. Marfan's syndrome
  - B. Weill-Marchesani syndrome
  - C. Homocystinuria
  - D. Hypermature cataract ✓
32. Subluxated lens without vitreous involvement is removed by
- A. ECCE
  - B. ICCE
  - C. Phacoemulsification
  - D. All
33. Cryoextraction of cataract is done in
- A. ECCE
  - B. ICCE
  - C. Phacoemulsification
  - D. All

## MCQs- Cataract

34. All are features of nuclear sclerosis except

- A. Painless progressive loss of vision
- B. Grey lens
- C. Presence of iris shadow ✓
- D. Vision usually improves on pin-hole

35. Radiation Cataract may occur due to exposure to

- A. Infrared
- B. X ray
- C. Ultraviolet
- D. All ✓

36. Lamellar cataract is a type of

- A. Acquired cataract
- B. Developmental cataract ✓
- C. Traumatic cataract
- D. Secondary cataract

37. The glucose metabolism in the lens is mainly by

- A. Glycolytic pathway ✓
- B. Pentose, Hexose, Monophosphate (HMP) shunt
- C. Kreb's citric acid cycle
- D. Sorbitol pathway

**All are glucose metabolism pathways, 80% of glucose metabolism in the lens is by Glycolytic pathway.**

38. The crystalline lens gets its nutrition mainly through

- A. Aqueous humour ✓
- B. Vitreous humour
- C. Tears
- D. Atmosphere

39. Rosette cataract is seen due to

- a. Trauma ✓
- b. Cu-foreign body
- c. Diabetes
- d. Hyperparathyroidism

40. Which is not associated with zonular cataract

- a. Diabetes ✓
- b. Intrauterine growth restriction
- c. Rickets
- d. Dental abnormalities

## MCQs- Cataract

41. Unioocular polyopia is seen in which stage of cataract

- a. Intumescent
- b. Mature
- c. Hypermature
- d. Incipient ✓

42. In complicated cataract, the following part of the lens is involved

- a. Anterior capsule
- b. Nucleus
- c. Posterior capsule ✓
- d. All of the above

**When posterior part of lens capsule is affected following changes occur:**

**Bread-crumbs opacities, Polychromatic lustre, Chalky white opacity of lens**

43. Oil drop cataract is seen in

- a. Hunters syndrome
- b. Galactosemia ✓
- c. Steroid therapy
- d. Rubella

44. Most common type of cataract due to exposure to radiation is

- a. Posterior subcapsular ✓
- b. Anterior subcapsular
- c. Total cataract
- d. Nuclear cataract

45. Vossius ring is seen on

- a. Anterior capsule ✓
- b. Posterior capsule
- c. Nucleus
- d. Cortex

46. Most common complication of ECCE is :

- a. Retinal detachment
- b. PCO ✓
- c. Vitreous Haemorrhage
- d. None

47. IOL commonly used in ECCE

- a. Iris fixed
- b. ACIOL
- c. PCIOL ✓
- d. Angle support

## MCQs- Cataract

48. Unilateral aphakia is corrected by any of the following except:

- a. ACIOL
- b. PCIOL
- c. Contact lens
- d. Glasses

49. Ideal site for IOL implantation

- a. Anterior chamber
- b. Endosulcus
- c. Ciliary supported
- d. Capsular bag ✓

50. Phakolytic glaucoma is best treated by:

- a. Peripheral iridectomy
- b. Cataract extraction ✓
- c. Trabeculectomy
- d. Miotics and Beta blockers

51. Most common cause of acquired cataract

- A. Hereditary
- B. Diabetics
- C. Smoking
- D. Ageing ✓

**Exposure to UV light plays a vital role in cataract formation in adults.**

52. Clinical assessment of cataract progression is done mainly using

- A. Visual acuity test ✓
- B. Contrast sensitivity tests
- C. Ophthalmoscopy
- D. Perimetry

53. Examination of lens is mainly done using

- A. Slit lamp ✓
- B. Ophthalmoscope
- C. Retinoscope
- D. Gonioscope

54. In phacoemulsification incision is usually

- A. <3mm ✓
- B. >3mm
- C. 6mm
- D. 10mm

## MCQs- Cataract

55. Main cause of painless progressive loss of vision in adults

- A. Cataract ✓
- B. Open angle glaucoma
- C. ARMD
- D. Progressive myopia

## MCQs- Glaucoma

1. The Mydriasis Provocative Test is a test for which glaucoma

- A. POAG
- B. PACG ✓
- C. NTG
- D. All

**Mydriatic provocative test is usually not preferred nowadays because this is not physiological. In this test either a weak mydriatic or simultaneously a mydriatic and miotic (10% phenylephrine and 2% pilocarpine) are used to produce a mid-dilated pupil. A pressure rise of more than 8 mm Hg is considered positive.**

2. Dark room test is a provocative test for

- A. POAG
- B. PACG ✓
- C. NTG
- D. None

**In Darkroom test IOP is recorded and patient is made to lie prone in a darkroom for 1 hour. Patient should must remain awake so that pupils remain dilated. After 1 hour, the IOP is again measured. An increase in IOP of more than 8 mm Hg is considered diagnostic of PACG suspect.**

3. Mydriatics are contraindicated if the anterior chamber is

- a. Deep
- b. Shallow ✓
- c. Normal
- d. Irregular

**This is because of the risk of angle closure glaucoma.**

4. Pachymetry is done in

- a. Glaucoma
- b. Fuch's dystrophy
- c. Before LASIK
- d. All ✓

**pachymetry is the measurement of thickness of cornea**

**Pachymetry is important in Keratoconus screening, IOP measurements, before surgeries like LASIK, Limbal Relaxing Incisions (LRI) etc**

5. Treatment of choice for the other eye in primary narrow angle glaucoma is

- A. Trabeculectomy
- B. Laser iridotomy ✓
- C. Laser trabeculoplasty
- D. Iridectomy

## MCQs- Glaucoma

6. 100 days glaucoma is seen in:
- Central retinal artery occlusion
  - Central retinal vein occlusion ✓
  - Neovascular glaucoma
  - Steroid induced glaucoma

**100 days Glaucoma is a neovascular glaucoma occurring in CRVO. It consists of occlusion of central retinal vein without significant retinal ischemia. This results in a venous stasis. Recurrent hemorrhages are frequent and neovascularization of retina and optic disc develop. Retina undergoes pigmentary and atrophic changes. Serious complications are cystoid degeneration of macula, optic atrophy and hemorrhagic or neovascular glaucoma.**

**Hemorrhagic glaucoma is also known as 100 day glaucoma because it starts 3 months after the episode of central retinal vein occlusion.**

7. In early glaucomatous cupping, disc is:
- Round
  - Oval vertically ✓
  - Oval horizontally
  - Pinpoint

**Early glaucomatous changes include:**

- 1. Vertical oval disc**
- 2. Asymmetry of >0.2 between the eyes**
- 3. Large cup, ie 0.6 or more**
- 4. Pallor of the disc**
- 5. Splinter haemorrhages**
- 6. Atrophy of RNFL**

8. The eyes susceptible to angle closure glaucoma are:
- Hypermetropic eye ✓
  - Myopic eye
  - Astigmatic eye
  - Pseudophakic eye

**Hypermetropic eyes are usually small, axial length lesser and Anterior chamber is shallow. So People with hypermetropia tend to be more at risk for narrow-angle glaucoma**

9. Beta Blockers lower IOP mainly by
- Decreased aqueous production ✓
  - Increased aqueous drainage
  - Lower episcleral venous pressure
  - All of above

## **MCQs- Glaucoma**

**Topical beta-blockers reduce the intraocular pressure (IOP) by blockade of sympathetic nerve endings in the ciliary epithelium causing a fall in aqueous humour production. Two types of topical beta-blockers are available for use in glaucoma: nonselective, which block both beta 1- and beta 2-adrenoceptors; and cardioselective, which block only beta 1-receptors. Of the beta-Blockers commercially available, timolol, levobunolol, metipranolol and carteolol are nonselective, and betaxolol is cardioselective.**

**Pilocarpine contracts longitudinal muscle of ciliary body and opens spaces in trabecular meshwork, thereby mechanically increasing aqueous outflow**

**carbonic anhydrase inhibitor like Dorzolamide lowers IOP by decreasing aqueous secretion.**

10. Rapid change in presbyopic correction is a classical feature of
- a. Retinal detachment
  - b. open angle glaucoma ✓
  - c. closed angle glaucoma
  - d. Senile Cataract

**There are typically no early warning signs or painful symptoms of open-angle glaucoma. It develops slowly and sometimes without noticeable sight loss for many years.**

**due to constant pressure on the ciliary muscle and its nerve supply ,accommodative failure happens and frequent changes in presbyopic glasses may be noticed**

**Other early symptoms include delayed dark adaptation mild headache and eyeache.**

11. Coloured halos around light are not seen in
- a. early stages of closed angle glaucoma
  - b. early stages of cataract
  - c. acute mucopurulent conjunctivitis
  - d. Corneal aberrations ✓

**Coloured halos in PACG occur due to accumulation of fluid in the corneal epithelium and alteration in the refractive condition of the corneal lamellae. In early senile cataract, due to presence of water droplets in the lens coloured halos may occur. In conjunctivitis the halos are due to discharge and can be eliminated by irrigating the eyes.**

**Emsley-Fincham stenopaec test is used to differentiate between halos due cornea and halo due to lens. When stenopaec slit is passed across the pupil, lenticular halo will show a break in the halo due to abrupt varied density in cataract, whereas a corneal halo will show reduced brightness (but no break) in the halo as any change in edema if present is gradual.**

## **MCQs- Glaucoma**

12. In Van Herick slit-lamp grading, closed angle is graded as
- a. Grade 0 ✓
  - b. Grade 1
  - c. Grade 4
  - d. None of the above

**The Van Herick technique for grading the depth of anterior chamber angles is one of the easiest methods to estimate the “openness” of the angle.**

**With an optic section of the limbal cornea, orient your beam at about a 60 degree angle and compare the width of the corneal section and the width of the shadow adjacent to it.**

**VH grade 0 indicate closed angle**

### **Other grades**

- 1:1 – Open angle, VH grade 4**
- 1:1/2 – Open angle, VH grade 3**
- 1:1/4 – Narrow angle, VH grade 2 (Angle Closure Possible)**
- 1: <1/4 – very narrow Angle, likely to be angle closure VH grade 1**

13. Increased ocular pressure in Buphthalmos causes all the following EXCEPT

- a. stretching of sclera
- b. corneal vascularisation ✓
- c. corneal curvature promiscence
- d. Rupture of Descemet’s membrane

14. All are causes of Sudden painless loss of vision except

- A. Central serous retinopathy
- B. Optic neuritis
- C. Primary Open Angle Glaucoma ✓
- D. Nonischaemic central retinal vein occlusion

15. Glaucoma which is also known as Chronic Simple Glaucoma

- A. Primary Angle Closure Glaucoma
- B. Primary Open Angle Glaucoma ✓
- C. Normal Tension Glaucoma
- D. Congenital Glaucoma

16. Test not used in glaucoma evaluation

- A. Pachymetry
- B. Perimetry
- C. Keratometry ✓
- D. Ophthalmoscopy

## **MCQs- Glaucoma**

17. Night blindness may occur in all except
- a. Vitamin A deficiency
  - b. High myopia
  - c. Angle closure glaucoma ✓
  - d. Oguchis disease

**Night blindness may occur in Open angle glaucoma. In advanced cases of primary open angle glaucoma, dark adaptation may be so much delayed that patient gives history of night blindness.**

18. POAG field changes may include all the following except:
- a. Arcuate scotoma.
  - b. Hemianopia ✓
  - c. Enlarged blind spot
  - d. Tubular vision

**Hemianopic defects are due to lesions in visual pathway**

19. All the following are features of POAG except:
- a. Tubular vision
  - b. Enlarged blind spot
  - c. General depression of isopters
  - d. Loss of central fields ✓

20. In acute angle closure glaucoma the pupil is:
- a. Rounded, irreactive and dilated
  - b. Pin point constricted
  - c. Oval, vertically dilated ✓
  - d. Normal sized, reactive

21. Early features of chronic simple glaucoma include all except:
- a. Mild headache
  - b. Acute onset ✓
  - c. Frequent change of presbyopic glasses
  - d. Clear cornea

22. Chances of PACG increase in all except:
- a. Small cornea
  - b. Flat cornea ✓
  - c. Shallow AC
  - d. Short axial length

## **MCQs- Glaucoma**

23. In POAG, the earliest field defect is:

- a. Arcuate scotoma
- b. Baring of blind spot ✓
- c. Bjerrum's scotoma
- d. Siedel's scotoma

24. Applanation tonometry is based on

- A. Imbert-Fick principle ✓
- B. Goldman's equation
- C. Perkins principle
- D. Principle of indentation

**The intraocular pressure (IOP) of the eye is determined by the balance between the amount of aqueous humor - that the eye makes and the ease with which it leaves the eye.**

**The Goldmann equation states:**

**$P_o = (F/C) + P_v$  ;  $P_o$  is the IOP in millimeters of mercury (mmHg), F is the rate of aqueous formation, C is the facility of outflow, and  $P_v$  is the episcleral venous pressure**

**Applanation tonometry is based on the Imbert-Fick principle, which states that the pressure inside an ideal dry, thin-walled sphere equals the force necessary to flatten its surface divided by the area of flattening ( $P = F/A$ , where P = pressure, F = force and A = area). In applanation tonometry, the cornea is flattened and the IOP is determined by varying the applanating force or the area flattened**

25. Most accurate measurement of IOP is done using

- A. Digital tonometry
- B. Schiottz tonometry
- C. Pneumotonometry
- D. Applanation tonometry ✓

26. Iatrogenic glaucoma occur due to

- A. Angle recession
- B. IOL dislocation
- C. Steroid use ✓
- D. Aphakia

27. All are features of Primary Open-angle Glaucoma except

- A. Acute onset ✓
- B. Painless loss of vision
- C. Field defects
- D. Cupping of disc.

## **MCQs- Glaucoma**

28. End stage of all glaucomas

- A. Absolute glaucoma ✓
- B. Acute congestive glaucoma
- C. Total glaucoma
- D. None

29. Bayoneting of blood vessels is a sign of

- A. Diabetic retinopathy
- B. ARMD
- C. Glaucoma ✓
- D. Retinal detachment

30. Which of these is not a likely cause of painful red eye in a patient?

- A. Open angle glaucoma ✓
- B. Closed angle glaucoma
- C. Conjunctivitis
- D. Herpes simplex

31. Essential feature of glaucoma is:

- A. Optic neuropathy ✓
- B. Raised intraocular pressure
- C. Reduced vision
- D. Angle closure

**Glaucoma is basically a type of progressive optic neuropathy with primary and secondary forms. Raised IOP is just a sign. Glaucoma exist without raised IOP also(NTG).**

**Raised IOP without neuropathy signs is not glaucoma, it is Ocular hypertension.**

32. Uveo-scleral outflow of aqueous humor is increased by:

- A. Prostaglandins ✓
- B. Beta blockers
- C. Miotics
- D. Carbonic anhydrase inhibitors

33. Risk factors for glaucoma include:

- A. Cardiovascular diseases
- B. Family history of glaucoma
- C. Hypothyroidism
- D. All ✓

34. Floaters can be seen in all of the following except ?

## **MCQs- Glaucoma**

- a. Vitreous hemorrhage
- b. Retinal detachment
- c. Uveitis
- d. Acute congestive glaucoma ✓

35. In chronic simple glaucoma, headache and eye pain is

- A. Abscent
- B. Mild ✓
- C. Severe
- D. Excruciating

## MCQs- Retina Optic nerve and Neuro Ophthalmology

1. Neurosensory part of retina contains how many layers

- A. 7
- B. 8
- C. 9 ✓
- D. 10

**Including pigment epithelium there are 10 layers. There is a space between pigment epithelium and Neuro sensory part of retina. Interphotoreceptor matrix (IPM) is present in the potential space between pigment epithelium and the neurosensory retina and it constitutes a strong binding mechanism between the two (by binding pigment epithelium to the photoreceptor).**

**Constituent molecules of IPM include:**

**Inter photoreceptor retinal binding protein (IRBP), proteoglycan- glycosaminoglycans (sulphated and nonsulphated chondroitin and hyaluronic acid), fibronectin, sialoprotein associated with rods and cones (SPARC), intercellular adhesion molecules, hyaluronic acid receptor (CD44 antigen), and lysosomal enzymes (matrix metalloproteinases and tissue inhibitors of metalloproteinases (TIMP)).**

2. Retinal layer which is close to vitreous body

- A. Pigment epithelium
- B. External limiting membrane
- C. Internal limiting membrane ✓
- D. Nerve fibres layer

3. Retinal layer which is close to choroid

- A. Pigment epithelium ✓
- B. External limiting membrane
- C. Internal limiting membrane
- D. Nerve fibres layer

**Pigment epithelium is firmly adherent to the underlying basal lamina (Bruch's membrane) of the choroid.**

4. Retinal layer which act as antireflective layer

- A. Pigment epithelium ✓
- B. External limiting membrane
- C. Internal limiting membrane
- D. Nerve fibres layer

5. In retinal detachment, fluid accumulate between

- A. Retina and choroid
- B. Pigment epithelium and rest of retina ✓
- C. Internal limiting membrane and rest of retina
- D. Outer nuclear layer and inner nuclear layer

## MCQs- Retina Optic nerve and Neuro Ophthalmology

6. The first order neurones of visual pathway consists

- A. Rods and cones
- B. Bipolar cells ✓
- C. Ganglion cells
- D. Lateral geniculate body

7. Diameter of foveola

- A. 5.5 mm
- B. 1.5mm
- C. 0.35mm ✓
- D. 0.1mm

8. Retina is thickest at

- A. Ora serrate
- B. Equatorial region
- C. Peripapillary region ✓
- D. Macular region

9. Retina is thinnest at

- A. Ora serrate ✓
- B. Fovea
- C. Foveola
- D. Macula

10. True regarding blood supply of retina

- A. Whole retina is vascular
- B. Whole retina is avascular
- C. Outer four layers are avascular (pigment epithelium to outer nuclear layer) ✓
- D. Only Pigment epithelium layer is avascular

11. Most common cause of CRAO

- A. Embolism ✓
- B. Angiospasm
- C. Retinal arteritis
- D. Raised IOP

**All the above are causes of CRAO, Emboli from the carotid artery and those of cardiac origin are the most common cause of CRAO. Atherosclerosis related thrombosis at the level of lamina cribrosa is another common cause of CRAO.**

12. In CRAO, patient may complaint

- A. Sudden painless loss of vision ✓
- B. Gradual painless loss of vision
- C. Sudden painful loss of vision

## MCQs- Retina Optic nerve and Neuro Ophthalmology

D. None

13. Cherry red spot is seen in

- A. CRAO ✓
- B. CRVO
- C. BRVO
- D. Diabetic retinopathy

14. Cattle truck appearance is seen in

- A. CRAO ✓
- B. CRVO
- C. BRVO
- D. Diabetic retinopathy

15. Neo vascular glaucoma is a complication of

- A. Diabetic retinopathy
- B. Eales' disease
- C. CRVO
- D. All ✓

**Neovascular glaucoma is usually associated with neovascularization of iris (rubeosis iridis). It is a common feature of diseases like Proliferative diabetic retinopathy CRVO Sickle-cell retinopathy Eales' disease Chronic intraocular inflammations intraocular tumours Retinal detachment CRAO etc**

16. Hard exudates are seen in

- A. Outer nuclear layer
- B. Outer plexiform layer ✓
- C. Ganglion cell layer
- D. Nerve fibre layer

17. Cotton wool spots are seen in

- A. Outer nuclear layer
- B. Outer plexiform layer
- C. Ganglion cell layer
- D. Nerve fibre layer ✓

18. In cystoid macular oedema, fluid accumulate in

- A. Outer nuclear layer
- B. Outer plexiform layer ✓
- C. Ganglion cell layer
- D. Nerve fibre layer

**In CME collection of fluid is in the outer plexiform (Henle's layer) and inner nuclear layer of the retina, centred around the foveola.**

## MCQs- Retina Optic nerve and Neuro Ophthalmology

19. Flame shaped haemorrhage occur in

- A. Outer nuclear layer
- B. Outer plexiform layer
- C. Ganglion cell layer
- D. Nerve fibre layer ✓

20. Henle's layer is

- A. Outer nuclear layer
- B. Outer plexiform layer ✓
- C. Ganglion cell layer
- D. Nerve fibre layer

21. Earliest and most pathogenic sign appear in diabetic retinopathy is

- A. Hard exudates
- B. Soft exudates
- C. Microaneurysm ✓
- D. Dot haemorrhages

22. Hard exudates are made up of

- A. Neovascularization
- B. Lipoproteins ✓
- C. Glycoproteins
- D. Mucopolysaccharides

23. In DR screening in type1 DM patient, first fundus examination should be done

- A. At the time of diagnosis
- B. After 2 months
- C. After 1 year
- D. After 5 years ✓

**Type 1 diabetes (juvenile diabetes) is insulin-dependent diabetes. It is a chronic condition in which the pancreas produces little or no insulin. It is called juvenile-onset diabetes, because it often begins in childhood. Type 1 is less common but Risk is more.**

**Type 2 Diabetes (adult-onset diabetes) is non insulin dependent. It is a chronic medical condition in which body does not use insulin properly. Type 2 diabetes is the most common type of diabetes.**

24. In diabetic retinopathy screening in type2 DM patient, first fundus examination be done

- A. At the time of diagnosis ✓
- B. After 2 months
- C. After 1 year
- D. After 5 years

## MCQs- Retina Optic nerve and Neuro Ophthalmology

25. True regarding diabetic retinopathy
- A. Always associated with hypertension
  - B. Always associated with glaucoma
  - C. Incidence increases with duration of disease ✓
  - D. Seen only in uncontrolled diabetes
26. FFA sign seen in Central serous chorioretinopathy
- A. Ink blot pattern
  - B. Smoke stack pattern
  - C. Flower petal appearance
  - D. A&B ✓
27. FFA sign seen in Cystoid macular oedema
- A. Ink blot pattern
  - B. Smoke stack pattern
  - C. Flower petal appearance ✓
  - D. Hyperfluorescence
28. In FFA, usually the dye is injected into
- A. Popliteal vein
  - B. Anticubital vein ✓
  - C. Subclavian vein
  - D. Femoral vein
29. Average Arm-to-Retina circulation time
- A. 5-9 sec
  - B. 10-15 sec ✓
  - C. 5-8 min
  - D. 10-15 min
30. Hypofluorescence is seen in all except
- A. Block fluorescence
  - B. Leakage of dye ✓
  - C. Blocked retinal or choroidal circulation
  - D. Loss of vascular tissue
- Leakage of the dye cause hyper fluorescence**
31. Length of intra orbital part of optic nerve
- A. 47-50mm
  - B. 25-30mm ✓
  - C. 10-16mm
  - D. 5-9mm

## MCQs- Retina Optic nerve and Neuro Ophthalmology

32. The optic nerve consists of axons that arise from

- A. Rods and cones
- B. Bipolar cells
- C. Ganglion cells ✓
- D. Amacrine cells

33. Fibres originating from the nasal halves of the both eyes decussate at

- A. Optic chiasma ✓
- B. Optic tract
- C. Lateral geniculate body
- D. Visual cortex

34. optic tract consists of fibres from

- A. Temporal half of the same eye and nasal half of opposite eye ✓
- B. Nasal half of the same eye and temporal half of opposite eye
- C. Nasal half of both eyes
- D. Temporal half of both eyes

35. Optic radiations extend from

- A. Retina to optic chiasma
- B. Optic chiasma to Lateral geniculate body
- C. Optic chiasma to visual cortex
- D. Lateral geniculate body to visual cortex ✓

36. Condition which Produce Visual Loss with a Normal Fundus

- A. Amblyopia
- B. Retrobulbar neuritis
- C. Chiasmal tumour
- D. All ✓

37. Candle wax spots are seen in retina

- A. Syphilis
- B. Sarcoidosis ✓
- C. Toxocariasis
- D. Toxoplasmosis

38. Snowball is a sign of

- A. Tuberculosis
- B. Leprosy
- C. Parsplanitis ✓
- D. VKH syndrome

## MCQs- Retina Optic nerve and Neuro Ophthalmology

39. Snowbank is a sign of

- A. Tuberculosis
- B. Leprosy
- C. Parsplanitis✓
- D. VKH syndrome

**Pars planitis is considered a subset of intermediate uveitis and is characterized by the presence of white exudates (snowbanks) over the pars plana or by aggregates of inflammatory cells in the vitreous (snowballs) in the absence of an infectious or a systemic disease**

40. In absence of light pupil will

- A. Dilate✓
- B. Constrict
- C. Remains same
- D. None

41. While sleeping pupil will

- A. Dilate
- B. Constrict✓
- C. Remains same
- D. None

### Causes of miosis

**Effect of local miotic drugs (parasympathomimetic drugs). Effect of opioids like morphine. Heroin use. Iridocyclitis (narrow, irregular, nonreacting pupil). Horner's syndrome. Head injury. Senile rigid miotic pupil. Due to effect of strong light.**

**During sleep pupil is pinpoint.**

42. When parasympatholytic drug applied on eye, pupil will

- A. Dilate✓
- B. Constrict
- C. Remains same
- D. None

43. When sympathomimetic drug applied on eye, pupil will

- A. Dilate✓
- B. Constrict
- C. Remains same
- D. None

## MCQs- Retina Optic nerve and Neuro Ophthalmology

### Causes of mydriasis

Effect of topical sympathomimetic drugs (e.g. adrenaline and phenylephrine).

Effect of topical parasympatholytic drugs (e.g. atropine, homatropine, tropicamide and cyclopentolate).

Acute congestive glaucoma (vertically oval large immobile pupil).

Absolute glaucoma.

Optic atrophy.

Retinal detachment.

Internal ophthalmoplegia.

3rd nerve paralysis.

44. In Horner's syndrome pupils are

- A. Dilated
- B. Constricted ✓
- C. Semi dilated
- D. No change

**Horner syndrome (Horner's syndrome or oculosympathetic paresis) results from an interruption of the sympathetic nerve supply to the eye and is characterized by the classic triad of miosis (ie, constricted pupil), partial ptosis, and loss of hemifacial sweating (ie, anhidrosis), as well as enophthalmos (sinking of the eyeball into the bony cavity that protects the eye). The term Horner syndrome is commonly used in English-speaking countries, whereas the term Bernard-Horner syndrome is common in France.**

**Von Passow syndrome is an association of Horner syndrome with iris heterochromia.**

45. In complete third nerve paralysis, pupil will

- A. Dilate ✓
- B. Constrict
- C. Remains same
- D. None

46. When a bright light is shown to one eye only

- A. Miosis occur in same eye
- B. Mydriasis occur in same eye
- C. Miosis occur in both eyes ✓
- D. Miosis occur in same eye and mydriasis in other eye

47. Systemic Opioids like morphine cause pupils

- A. Dilate
- B. Constrict ✓
- C. Remains same
- D. None

## MCQs- Retina Optic nerve and Neuro Ophthalmology

48. average Optic disc diameter is approximately

- a. 1 mm
- b. 1.5 mm ✓
- c. 0.5 mm
- d. 3 mm

**Macula- 5.5mm Diameter**

**Parafoveal area- 2.5mm Diameter**

**Fovea- 1.5mm Diameter**

**Foveola- 0.35mm Diameter**

49. Optic nerve axon emerges from:

- a. Ganglion cells ✓
- b. Rods and cones
- c. Amacrine cells
- d. Inner nuclear layer

50. Length of optic nerve is

- a. 3cm
- b. 5cm ✓
- c. 10 cm
- d. 50 cm

**Note- answer is given in centimetres, in millimetres answer will be 50**

51. Optic nerve derives from

- a. Optic sulcus
- b. Optic vesicle
- c. Optic stalk ✓
- d. Surface ectoderm

52. Ptosis and mydriasis are seen in:

- a. Facial nerve palsy
- b. Optic nerve palsy
- c. Oculomotor nerve palsy ✓
- d. Sympathetic palsy

53. Homonymous hemianopia is the result of a lesion in:

- a. Optic chiasma
- b. Retina
- c. Optic tract ✓
- d. Optic nerve

**Lesion in optic chiasma cause \*bitemporal hemianopia\***

## MCQs- Retina Optic nerve and Neuro Ophthalmology

54. Blind spot is also known as

- a. Yellow spot
- b. Fovea centralis
- c. Optic disc ✓
- d. Optic chiasma

**Macula is also known as yellow spot**

55. optic tract consists of retinal fibres from

- a. Temporal half of same eye and the nasal half of opposite eye ✓
- b. Nasal half of same eye and the temporal half of opposite eye
- c. All fibers from same eye
- d. All fibers from opposite eye

56. The optic nerve, also known as

- a. cranial nerve I
- b. cranial nerve II ✓
- c. cranial nerve III
- d. cranial nerve VII

57. At optic disc

- a. Only rod cells are present
- b. Only cone cells are present
- c. Both rods and cones are present
- d. Both rods and cones are absent ✓

58. Which cells of the retina are responsible for scotopic vision?

- A. bipolar cells
- B. rod cells ✓
- C. ganglion cells
- D. cone cells

59. Which part of the retina has the greatest sensitivity to light?

- A. the optic disc
- B. macula lutea
- C. the choroid
- D. fovea centralis ✓

60. Bitemporal hemianopia is seen with

- a. aneurysm of circle of Willis ✓
- b. temporal SOL
- c. frontal SOL
- d. retinoblastoma

## MCQs- Retina Optic nerve and Neuro Ophthalmology

61. Optic nerve contains

- a. pigment layer
- b. ganglion cell layer
- c. nerve fibre layer ✓
- d. all of the above

62. Ring scotoma is seen in

- a. papilloedema
- b. macular oedema
- c. central retinal artery occlusion
- d. retinitis pigmentosa ✓

63. Candle wax spots in the retina are seen in

- a. sarcoidosis ✓
- b. toxocara
- c. syphilis
- d. cytomegalo inclusion virus

64. The retinoblastoma can present itself as

- a. amaurotic cat's eye
- b. hypopyon with esotropia
- c. enlargement of the globe
- d. all of the above ✓

65. Visual phototransduction occur in

- A. Retina ✓
- B. Optic nerve
- C. Lateral geniculate body
- D. Visual cortex

66. Fibres originating from the nasal halves of the retina decussate at

- A. Optic nerve
- B. Optic tract
- C. Optic chiasma ✓
- D. Lateral geniculate body

67. After retinal stimulation the visual impulse reaches occipital cortex after

- a. 1/24 sec
- b. 24 m sec
- c. 124 m sec ✓
- d. 142 m sec

## MCQs- Retina Optic nerve and Neuro Ophthalmology

68. Retinal detachment may be associated with refractive error

- a. High Hypermetropia
- b. High myopia ✓
- c. Astigmatism
- d. None of the above

69. In CRAO, a cherry red spot is due to:

- a. Hemorrhage at macula
- b. Increased choroidal perfusion
- c. Increase in retinal perfusion at macula
- d. The contrast between pale retina and reddish choroids ✓

70. Which of the following is ideal for evaluating macular functions in a patient whose vision is only hand movement (HM)?

- a. Color perception ✓
- b. Confrontation test
- c. Light projection
- d. Light perception

71. Which of the following is not the blood supply to the optic nerve?

- a) Short posterior ciliary arteries.
- b) Central retinal artery.
- c) Middle meningeal artery. ✓
- d) Anterior cerebral artery.

72. Para sympathetic nerve supply to ciliary ganglion travels along:

- a) Nerve to inferior oblique. ✓
- b) Nerve to inferior rectus.
- c) Sympathetic supply to eyeball.
- d) Nerve of pterygoid canal.

73. Optic nerve contains

- a. pigment layer
- b. ganglion cell layer
- c. nerve fibre layer ✓
- d. all of the above

74. Optic disc is also known as

- a. macula lutea
- b. blind spot ✓
- c. foveola
- d. rods and cones

## MCQs- Retina Optic nerve and Neuro Ophthalmology

75. Superior oblique muscle is supplied by the

- a. optic nerve
- b. third cranial nerve
- c. fourth cranial nerve ✓
- d. sixth cranial nerve

76. The sensory nerve supply of the eye is by the

- a. optic nerve
- b. third cranial nerve
- c. fifth cranial nerve ✓
- d. seventh cranial nerve

**Ophthalmic nerve (part of the trigeminal nerve, CN V): This nerve has three branches:**

**The lacrimal nerve runs to the lacrimal gland and gives off branches to the conjunctiva and skin of the superior eyelid.**

**The frontal nerve enters through the superior orbital fissure and provides sensory innervation to the superior eyelid, scalp, and forehead.**

**The nasociliary nerve is the sensory nerve to the eyeball. It also has branches that serve the orbit and other parts of the face. One of its branches, the infratrochlear nerve, supplies the eyelids, conjunctiva, and lacrimal sac.**

77. Which of the following nerve is not a motor nerve to extra ocular muscles?

- a) 3rd cranial nerve
- b) 4th cranial nerve
- c) 5th cranial nerve ✓
- d) 6th cranial nerve

78. Which of the following is an essential nucleus for pupillary light reflex:

- a) Central grey matter.
- b) 3rd cranial nerve.
- c) Edinger Westphal nucleus. ✓
- d) Pontine nuclei.

79. Following structure does not pass through annulus tendinosus:

- a) Optic nerve.
- b) Trochlear nerve. ✓
- c) Abducent nerve.
- d) Nasociliary nerve.

## MCQs- Retina Optic nerve and Neuro Ophthalmology

80. Pupil reflex fibres pass from retina to Edengar Westphal nucleus:

- a) Directly.
- b) Via visual cortex.
- c) Via hypothalamus.
- d) Superior colliculus. ✓

81. Retinal blood supply is derived:

- a) Only from central retinal artery.
- b) Only from choroidal arteries.
- c) From ophthalmic artery ✓
- d) From anterior communicating.

82. The change unlikely to occur in eyes during the near vision is:

- a) Contraction of ciliary muscles.
- b) Constriction of pupil.
- c) Convergence of eye balls.
- d) Stimulation of sympathetic nerves. ✓

83. A middle aged man is diagnosed to have a pituitary tumor damaging the center of the optic chiasma. The type of hemianopia in this man will be:

- a) Binasal.
- b) Bitemporal. ✓
- c) Homonymous.
- d) Nasal.

84. A young man was able to see but could not interpret what was being seen. He was diagnosed to have word blindness. He was most likely to have lesion in:

- a) Optic chiasma.
- b) Optic tract.
- c) Primary visual cortex.
- d) Visual association area. ✓

85. The cortical area involved in the control of voluntary eye fixation is:

- a) Angular gyrus.
- b) Frontal eye field. ✓
- c) Primary visual area.
- d) Visual association area.

86. When the pupil is dilated, there is decreased:

- a) Amount of light falling on the retina.
- b) Chromatic aberrations.
- c) Depth of focus of the image. ✓
- d) Spherical aberrations.

## MCQs- Retina Optic nerve and Neuro Ophthalmology

87. The corneal reflex pathway involves:

- a) Brain stem. ✓
- b) Lateral geniculate body.
- c) Cerebral cortex.
- d) Optic nerve.

88. Lesion of the optic tract causes

- a. homonymous hemianopia ✓
- b. bitemporal hemianopia
- c. binasal hemianopia
- d. ipsilateral blindness

89. Scotopic vision is due to

- a. cones
- b. rods ✓
- c. both
- d. none

90. Visual acuity is a record of

- a. light sense
- b. form sense ✓
- c. contrast sense
- d. colour sense

91. Visual centre is situated in

- a. parietal lobe
- b. frontal lobe
- c. midbrain
- d. occipital lobe ✓

92. Optic nerve extends up to

- a. optic chiasma ✓
- b. optic tracts
- c. lateral geniculate body
- d. optic radiations

93. The normal field of vision superiorly is:

- a) 90 degrees.
- b) 60 degrees. ✓
- c) 70 degrees.
- d) 45 degrees.

## MCQs- Retina Optic nerve and Neuro Ophthalmology

The field of vision is the total area in which objects can be seen while fixing straight ahead. The extent of the normal visual field is limited in an individual by anatomical features such as the brow superiorly, the nose nasally and the cheek inferiorly. It is seen that the field for a white target extends 60° upwards, rather more than 90° outwards, 70° downwards and 60° inwards. The extent varies with illumination, size of the test-object, contrast of the test-object vis-à-vis the background, and the state of adaptation of the eye.

94. Highest visual resolution is seen in

- a. macula lutea
- b. fovea centralis ✓
- c. optic disc
- d. ora serrata

95. Second order neurons in the optic pathway are present in

- a. superior colliculus
- b. retina ✓
- c. medial geniculate body
- d. lateral geniculate body

96. The sensory nerve supply of the eye is by the

- a. optic nerve
- b. third cranial nerve
- c. fifth cranial nerve ✓
- d. seventh cranial nerve

**Ophthalmic nerve (part of the trigeminal nerve, CN V): This nerve has three branches: The lacrimal nerve runs to the lacrimal gland and gives off branches to the conjunctiva and skin of the superior eyelid.**

**The frontal nerve enters through the superior orbital fissure and provides sensory innervation to the superior eyelid, scalp, and forehead.**

**The nasociliary nerve is the sensory nerve to the eyeball. It also has branches that serve the orbit and other parts of the face. One of its branches, the infratrochlear nerve, supplies the eyelids, conjunctiva, and lacrimal sac.**

97. Drug that cause Retinopathy due to long term usage

- A. Chloramphenicol
- B. Chloroquine ✓
- C. Phenylephrine
- D. Cortical steroids

## MCQs- Retina Optic nerve and Neuro Ophthalmology

98. Scleral buckling is done in
- A. Diabetic retinopathy
  - B. Hypertensive retinopathy
  - C. Retinal detachment ✓
  - D. Angle closure glaucoma
99. Most common cause of optic atrophy in young patients is
- A. Multiple sclerosis ✓
  - B. Toxic amblyopia
  - C. Steroid use
  - D. Trauma
100. Lesions in optic chiasma is mostly due to
- A. Bony erosion
  - B. Pituitary gland tumours ✓
  - C. Craniopharyngioma
  - D. Trauma

# MCQs in EOM and squint

1. In worth's 4 dot test, patient with Abnormal Retinal Correspondence will see

- A. 2 dots
- B. 3 dots
- C. 4 dots ✓
- D. 5 dots

2. In paralytic squint

- A. Primary deviation is more than Secondary deviation
- B. Primary deviation is equal to Secondary deviation
- C. Primary deviation is less than Secondary deviation ✓
- D. Secondary deviation is absent

3. Duane retraction syndrome (DRS) cause

- A. Concomitant squint
- B. Paralytic squint
- C. Restrictive squint ✓
- D. Pseudo squint

4. Forced duction test (FDT) is used to differentiate

- A. Latent squint and Manifest squint
- B. Concomitant squint and Incomitant squint
- C. Paralytic squint and restrictive squint ✓
- D. Concomitant squint and pseudo squint

5. Positive angle kappa cause

- A. Esotropia
- B. Exotropia
- C. Pseudoexotropia ✓
- D. Pseudoesotropia

6. Muscle pair involved in levoelevation

- A. Right SR and left IO
- B. Right SR and left SR
- C. Right IO and left IO
- D. Right IO and left SR ✓

7. Supranuclear eye movement system with sudden, jerky conjugate eye movements, that occur as the gaze shifts from one object to another is known as

- A. Saccadic system ✓
- B. Vergence system
- C. Vestibular system
- D. Optokinetic system

# MCQs in EOM and squint

## \*SUPRANUCLEAR CONTROL OF EYE MOVEMENTS\*

supranuclear control of eye movements helps maintaining binocular single vision even if the object or the observer's head and/or body moves

### supranuclear eye movement systems

1. Saccadic system
2. Smooth pursuit system
3. Vergence system
4. Vestibular system
5. Optokinetic system
6. Position maintenance system

8. Position maintenance system maintain a specific gaze position by means of rapid micromovements called

- A. Jerks
- B. Saccades
- C. Drifts
- D. Flicks ✓

**Position maintenance system helps to maintain a specific gaze position by means of rapid micromovements called 'flicks' and slow micromovements called 'drifts' .**

9. Not a cause of binocular diplopia

- A. Concomitant Squint ✓
- B. Third nerve palsy
- C. Internuclear ophthalmoplegia
- D. Orbital floor fracture

10. In Paralytic squint, false projection is

- A. Abscent
- B. Negative
- C. Positive ✓
- D. None

11. Primary action of inferior rectus

- A. Adduction
- B. Abduction
- C. Infraduction(depression) ✓
- D. Supraduction

12. Secondary action of inferior rectus

- A. Adduction
- B. Abduction
- C. Intorsion
- D. Extorsion ✓

# MCQs in EOM and squint

13. Synergist muscle of inferior rectus

- A. Superior rectus
- B. Superior oblique ✓
- C. Inferior oblique
- D. Lateral rectus

14. Incycloduction is primary action of

- A. Medial rectus
- B. Inferior rectus
- C. Superior oblique ✓
- D. Inferior oblique

15. Contralateral antagonist of Right lateral rectus

- A. Right medial rectus
- B. Left medial rectus
- C. Left lateral rectus ✓
- D. None

**Antagonist of Rt lateral rectus is Rt medial rectus, but Contralateral antagonist of Right lateral rectus is Left lateral rectus**

16. Features of paralytic squint

- A. Diplopia
- B. False orientation
- C. Vertigo
- D. All ✓

17. Upward movement of the eye caused by

- A. Superior rectus
- B. Inferior oblique
- C. Both ✓
- D. None

18. \_\_\_\_\_ is also known as Infraduction

- A. Depression ✓
- B. Intorsion
- C. Adduction
- D. Abduction

# MCQs in EOM and squint

Unocular movements are called 'ductions'

**Other names**

**Adduction -medial rotation**

**Abduction -lateral rotation**

**elevation -Supraduction.**

**Depression- Infraduction**

**intorsion - Incycloduction**

**extorsion - Excycloduction**

19. Bielschowsky's head tilt test is used to diagnose which muscle palsy

- A. Medial rectus
- B. Superior oblique ✓
- C. Lateral rectus
- D. None

**The Parks–Bielschowsky three-step test, also known as Park's three-step test or Bielschowsky head tilt test, is a method used to diagnose palsy of superior oblique muscle and trochlear nerve (IVth cranial nerve)**

**\*Step 1:\* Determine which eye is hypertropic in primary position. If there is right hypertropia in primary position, then the depressors of the R eye (IR/SO) or the elevators of the L eye are weak (SR/IO).**

**\*Step 2:\* Determine whether the hypertropia increases on right or left gaze. The vertical rectus muscles have their greatest vertical action when the eye is abducted. The oblique muscles have their greatest vertical action when the eye is adducted.**

**\*Step 3:\* Determine whether the hypertropia increases on right or left head tilt. During right head tilt, the right eye intorts (SO/SR) and the left eye extorts (IO/IR).**

20. In abnormal retinal correspondence (ARC), during worth's 4 dot test, the patient with squint sees \_\_\_\_\_ dots

- A. 4 ✓
- B. 5
- C. 3 and 2 alternatively
- D. None

21. Distance between Superior rectus insertion and limbus

- A. 5.5mm (MR)
- B. 6.0mm (IR)
- C. 7.0mm (LR)
- D. 7.7mm (SR) ✓

**The insertion distance increase clock wise from medial rectus to Superior rectus**

# MCQs in EOM and squint

22. Movement caused by superior oblique muscle

- A. Depression
- B. Intorsion
- C. Lateral rotation
- D. All ✓

23. Nerve supply of lateral rectus muscle

- A. 3rd
- B. 4th
- C. 6th ✓
- D. 7th

**Superior oblique is supplied by 4th cranial nerve, lateral rectus is supplied by 6th cranial nerve, all other EOMs are supplied by 3rd cranial nerve**

24. Esophoria is a type of

- A. Apparant squint
- B. Latent squint ✓
- C. Manifest squint
- D. Paralytic squint

25. Grade 2 binocular single vision stands for

- A. Abnormal Retinal correspondence
- B. Simultaneous macular perception (grade 1)
- C. Steriopsis (grade 3)
- D. Fusion ✓

26. There are \_\_\_\_\_ cardinal positions of gaze

- a. 9
- b. 6 ✓
- c. 4
- d. 8

27. In Worth's four dot test the patient has diplopia if he sees

- a. only two red lights
- b. only two green lights
- c. green and red lights alternately
- d. two red and three green lights ✓

28. Hess screen is a record of

- a. primary and secondary deviation ✓
- b. heterophoria
- c. fusion
- d. retinal correspondence

# MCQs in EOM and squint

29. Exophoria is common in

- a. myopia ✓
- b. hypermetropia
- c. Presbyopia
- d. Astigmatism

30. In paralytic squint

- a. primary deviation > secondary deviation
- b. primary deviation < secondary deviation ✓
- c. primary deviation = secondary deviation
- d. none of the above

**Primary and secondary deviation: The deviation of the squinting eye behind the occluder when the nonsquinting eye is fixating is called primary deviation. The deviation of the nonsquinting eye behind the occluder when the squinting eye is fixating is called secondary deviation.**

**If both deviations are equal, the squint is comitant. The reason why the primary and secondary deviations are equal is because of Hering's law, which means that the movement of the 2 eyes is equal and symmetrical.**

**If the primary deviation is greater than the secondary, the squint is spastic and fibrotic (incomitant). If this is due to contractures, a slight innervation will produce movement of the affected eye and so the primary deviation is greater than the secondary deviation.**

**If the secondary deviation is greater than the primary, the squint is paralytic. This is because increased innervation is required by the paretic muscle to move the eye into a certain position and this same amount of innervation goes to the normal muscle in the other eye, causing the secondary deviation to be greater than the primary deviation.**

31. Which of the following rectus muscle insets closest to the limbus

- A. Superior rectus
- B. Inferior rectus
- C. Medial rectus ✓
- D. Lateral rectus

32. Which of the following muscle insert farthest from the limbus

- A. Superior rectus
- B. Inferior rectus
- C. Superior oblique
- D. Inferior oblique ✓

# MCQs in EOM and squint

33. All the four recti originate from

- A. common annular tendon around optic foramen ✓
- B. floor of orbit
- C. roof of orbit
- D. equator of eyeball

34. The 3rd cranial nerve supplies all muscles EXCEPT

- A. inferior oblique
- B. inferior rectus
- C. superior oblique ✓
- D. superior rectus

35. The only extraocular muscle which does not arise from the apex of the orbit is:

- A. Superior rectus
- B. Superior oblique
- C. Inferior oblique ✓
- D. Inferior rectus

36. Third cranial nerve innervates all of the following except

- A. Superior oblique muscle ✓
- B. Levator palpebrae muscle
- C. Inferior oblique muscle
- D. Medial rectus muscle

37. All are causes of Unilateral diplopia except

- A. Subluxated lens
- B. paralytic squint ✓
- C. Incipient cataract
- D. Keratoconus

38. Accommodative squint is corrected by all except

- A. Orthoptic exercises
- B. Spectacles
- C. Contact lens
- D. Surgery ✓

39. Which muscle inserts the farthest posterior to the limbus?

- A) Medial rectus
- B) Superior rectus
- C) Inferior rectus
- D) Superior oblique ✓

**Among rectus muscles, MR is closest (5.5) to limbus and SR farthest (7.9) from limbus.**

# MCQs in EOM and squint

40. In grades of binocular vision; grade 2 is:

- a. Fusion ✓
- b. Stereopsis
- c. Simultaneous macular perception
- d. Convergence

**There are three grades of binocular vision as given by Worth's classification:**

**Grade I: Simultaneous macular perception**

**Grade II: fusion**

**Grade III: Stereopsis**

41. In concomitant squint:

- a. Primary deviation > Secondary deviation
- b. Primary deviation < Secondary deviation
- c. Primary deviation = Secondary deviation ✓
- d. None of the above

**concomitant or Nonparalytic strabismus is not due to paralysis of extraocular muscles. Comitant (or concomitant) strabismus is a deviation that is the same magnitude regardless of gaze position. Paralytic or Noncomitant (or incomitant) strabismus has a magnitude that varies as the patient shifts his or her gaze up, down, or to the sides.**

42. The only extraocular muscle which does not arise from the apex of the orbit is:

- a. Superior rectus
- b. Superior oblique
- c. Inferior oblique ✓
- d. Inferior rectus

43. The action of superior rectus is:

- a. Elevation, intorsion, abduction
- b. Elevation, intorsion, adduction ✓
- c. Elevation, extorsion, adduction
- d. Elevation, extorsion, abduction.

44. Nerve supply of LPS muscle

- a. CN iii ✓
- b. CN iv
- c. CN vi
- d. CN vii

45. Secondary action of superior rectus muscle is

- a. Intorsion ✓
- b. Extorsion
- c. Adduction
- d. Abduction

# MCQs in EOM and squint

46. The tendons of all EOMs attach to \_\_\_\_\_.

- a. Choroid
- b. Sclera ✓
- c. Conjunctiva
- d. Limbus

47. Following are features of paralytic squint except

- A. Abnormal head posture
- B. Amblyopia ✓
- C. Diplopia
- D. Restricted eye movements

48. Crossed diplopia is associated with

- A. Eso deviations
- B. Exo deviations ✓
- C. Cyclo deviations
- D. All

49. Third nerve palsy is associated with

- A. Crossed diplopia ✓
- B. Uncrossed diplopia
- C. Uniocular diplopia
- D. Amblyopia

50. Action of right superior oblique muscle is?

- A. dextrodepression
- B. dextroelevation
- C. levoelevation
- D. levodepression ✓

**While looking towards left and down (levodepression) in LE depression as primary action (muscle IR) and in RE depression as secondary action (muscle SO). Similarly every direction can be calculated**

**In Levo elevation, LE elevation by SR and RE elevation by IO**

**In dextro depression RE depression by IR and LE depression by SO**

**In dextro elevation, RE elevation by SR and LE elevation by IO**

51. Oculomotor nerve palsy features include all, EXCEPT

- a. facial weakness ✓
- b. divergent squint
- c. dilated fixed pupil
- d. absent accommodation

## MCQs in EOM and squint

52. Which of the following extraocular muscle is supplied by the superior division of the oculomotor nerve?

- A) Superior oblique
- B) Inferior rectus
- C) Medial rectus
- D) Superior rectus ✓

**The superior division of CN III supplies the superior rectus and the levator. The inferior division of CN III supplies the medial rectus, inferior rectus, and inferior oblique. The superior oblique is supplied by CN IV. The lateral rectus is supplied by CN VI**

53. Which muscle originates in the orbital apex above the annulus of Zinn?

- A) Superior oblique ✓
- B) Superior rectus
- C) Lateral rectus
- D) Inferior oblique

54. Which extraocular muscle has the shortest tendon?

- A) Medial rectus
- B) Lateral rectus
- C) Superior oblique
- D) Inferior oblique ✓

55. Superior oblique muscle is supplied by the

- a. optic nerve
- b. third cranial nerve
- c. fourth cranial nerve ✓
- d. sixth cranial nerve

# MCQs in Ophthalmology - Lines Dots Rings and Spots

1. Vogt striae (Vogt lines) are seen in

- A. Keratoconus ✓
- B. Keratoglobus
- C. Corneal degeneration
- D. Pterygium

**Vogt's striae are vertical (rarely horizontal) fine, whitish lines in the deep/posterior stroma and Descemet's membrane commonly found in patients with keratoconus**

2. Stocker's line on cornea is seen in cases of

- A. Keratoconus
- B. Keratoglobus
- C. Corneal degeneration
- D. Pterygium ✓

**vertical line at the head of pterygium is known as Stocker's line.**

3. Stocker's line is due to deposition of

- A. Iron ✓
- B. Copper
- C. Sodium
- D. Calcium

**Fleischer's ring in keratoconus, Hudson-Stähli's line in corneal scar, Ferry's line in filtering bleb, and Stocker's line in pterygium, all these are due to iron deposition.**

4. Mittendorf's dot is located on

- A. Cornea
- B. Iris
- C. Lens ✓
- D. Retina

**A Mittendorf dot is a small, circular opacity on the posterior lens capsule, classically nasal in location, which represents the anterior attachment of the hyaloid artery. The hyaloid artery is present during gestation and typically regresses completely. Failure to do so can lead to benign findings, such as a Mittendorf dot or a Bergmeister's papilla, or pathologic changes as seen in persistent fetal vasculature syndrome.**

**Mittendorf dot may be seen in association with posterior polar cataract**

5. Fischer-Khunt spot is located on

- A. Cornea
- B. Sclera ✓
- C. Iris
- D. Lens

**Senile scleral paque, area of hyalinised sclera anterior horizontal rectus muscle insertion. Seen in old age.**

# MCQs in Ophthalmology - Lines Dots Rings and Spots

6. Anatomically optic disc is located on which side of macula

- A. Nasal ✓
- B. Temporal
- C. Central
- D. Opposite

**Nasal side of the retina corresponds to temporal field of vision. That's why in perimetry blind spot is on temporal side**

7. Macula lutea is also known as

- A. Blind spot
- B. Red spot
- C. Yellow spot ✓
- D. Optic disc

8. Koplik's spots are seen on

- A. Conjunctiva ✓
- B. Cornea
- C. Iris
- D. Retina

**Koplik's spots on conjunctiva are seen in patients with measles infection.**

9. Vossius ring is seen on

- A. Cornea
- B. Iris
- C. Lens ✓
- D. Retina

**Vossius ring occurs due to compression of the pigmented posterior iris epithelial cells and/or pupillary ruff against the anterior lens capsule blunt injury to the eye. Rupture of the cells causes deposition of a circular line of melanin pigment on the lens capsule**

10. In which of the following condition, cattle truck appearance is seen:

- A. Retinal neovascularization
- B. BRVO
- C. CRVO
- D. CRAO ✓

11. Cotton wool spots are seen in

- A. Non-ischaemic CRVO
- B. Diabetic retinopathy
- C. Hypertensive retinopathy
- D. All ✓

# MCQs in Ophthalmology - Lines Dots Rings and Spots

12. Roth spots are seen in

- A. Leukemic retinopathy ✓
- B. ARMD
- C. ROP
- D. CRAO

13. Cherry Red spots are seen in

- A. CRVO
- B. CRAO ✓
- C. ARMD
- D. BRVO

14. In perimetry, blind spot is located on which side

- A. Nasal
- B. Temporal ✓
- C. Central
- D. Anywhere

15. Enlargement of blind spot is not seen in

- A. Primary open angle glaucoma
- B. Primary angle closure glaucoma ✓
- C. papilledema
- D. Optic disc drusen

16. In Kayser-Fleischer ring, deposits are seen in which layer of cornea

- A. Bowman's membrane
- B. Descemet's membrane ✓
- C. Stroma
- D. Endothelium

17. Kayser-Fleischer ring is a ophthalmic sign of

- A. Wilson's disease ✓
- B. Down syndrome
- C. Tuberculosis
- D. AIDS

18. Fleischer ring is due to deposition of

- A. Iron ✓
- B. Copper
- C. Sodium
- D. Calcium

**Fleischer rings are pigmented rings in the peripheral cornea, resulting from iron deposition in keratoconus. Kayser-Fleischer rings are caused by copper deposits in descemet's membrane of the cornea**

# MCQs in Ophthalmology - Lines Dots Rings and Spots

19. Arlt's line is seen with

- A. Membranous conjunctivitis
- B. Trachoma ✓
- C. Pterygium
- D. Conjunctival xerosis

20. Soemmering's ring is seen in

- A. Cornea
- B. Iris
- C. Lens ✓
- D. Retina

21. Bitot's spots are seen on

- A. Conjunctiva ✓
- B. Cornea
- C. Sclera
- D. Retina

22. Brushfield spots are seen on

- A. Cornea
- B. Iris ✓
- C. Lens
- D. Retina

23. Foster-Fuchs' spot at the macula are seen in

- A. Pathological myopia ✓
- B. ARMD
- C. UV burn to eye
- D. Retinal detachment

24. Weiss ring is associated with

- A. Proliferative vitreous detachment ✓
- B. Retinal detachment
- C. Macular degeneration
- D. After cataract

25. Wessley ring is located on

- A. Cornea ✓
- B. Lens
- C. Iris
- D. Retina

# MCQs in Ophthalmology - Lines Dots Rings and Spots

26. Ehrlich-Turck Lines are seen in

- A. Uveitis ✓
- B. Retinal detachment
- C. papilledema
- D. Pathological myopia

27. Corneal ring infiltrates are classical sign of

- A. Acanthamoeba keratitis ✓
- B. Superficial punctate keratitis
- C. Herpes simplex keratitis
- D. Keratomalacia

**Corneal ring infiltrates are classical sign of Acanthamoeba keratitis, it is also seen rarely with bacterial infection like staphylococcus.**

**Ring of stromal infiltrate (Wessley immune ring) is seen in herpes simplex infection**

28. In Corneal graft rejection, Khodadoust line is present on the layer

- A. Epithelium
- B. Stroma
- C. Descemet's membrane
- D. Endothelium ✓

**In corneal graft rejection Krachmer spots are seen in Bowman's membrane.**

29. In xerophthalmia, bitots spots appear on

- A. Conjunctiva ✓
- B. Sclera
- C. Cornea
- D. Retina

30. Elschnig spots are seen in

- A. Hypertensive choroidopathy ✓
- B. Diabetic retinopathy
- C. After cataract
- D. Cicatricial ectropion

**Elschnig's spots: seen in Hypertensive choroidopathy**

**Elschnig's pearls (Elschnig's bodies): a type of after cataract**

**Elschnig's scleral ring : Scleral ring is a white circular band that separates the intrapapillary region of optic disc from the peripapillary area. The scleral ring itself does not belong to optic disc. This is important for all optic disc measurements because the inclusion of scleral ring as part of optic disc falsely enlarges the neuroretinal rim &**

# MCQs in Ophthalmology - Lines Dots Rings and Spots

decreases cup/disc ratio. Loss of nerve fiber layer in Glaucoma can make the scleral ring more visible due to loss of overlying tissue.

**Elschnig's conjunctivitis**: Chronic conjunctivitis associated with hyperplasia of the tarsal gland and the frothy secretions

**Z-plasty (Elschnig's operation)**: is useful to correct mild to moderate degree of cicatricial Ectropion.

**Elschnig's syndrome (Elschnig's complex)**: Also known as Blepharo-cheilo-dentin (BCD) syndrome. Features include ectropion of lower eyelids, distichiasis of upper eyelids, euryblepharon (symmetrical enlargement of the palpebral aperture associated with large eyelids), bilaterally cleft lip/palate, oligodontia, and conical crown form. Initially known under the eponym Elschnig syndrome.

**Elschnig's theory**: Elschnig suggested the anaphylactic theory of the pathogenesis of sympathetic ophthalmia. According to this theory, it is not a question of a particular infection, but of an anaphylactoid inflammation against the body's own uvea tissue. Under certain conditions, uvea tissue damaged by trauma will act as an antigen and subsequently occasion a sensitisation of the body's own uvea albumin. This causes an anaphylactic uveitis on the undamaged eye.

**Elschnig's intracapsular forceps**: fine untoothed forceps for holding tissue, swabs, sutures, etc; removing things like clots, capsule fragments, lens, etc; used in cataract surgery

## Clinical methods in Ophthalmology

1. In Purkinje images test, Aphakia shows
  - A. 4 images
  - B. 3 images
  - C. 2 images ✓
  - D. 1 image
  
2. In mature cataract, which of the following is correct
  - A. Only first Purkinje image is visible
  - B. 3rd and 4th Purkinje images are absent
  - C. 4th Purkinje image is absent ✓
  - D. All four Purkinje images are visible
  
3. In pseudophakia how many Purkinje images are visible
  - A. 1
  - B. 2
  - C. 3
  - D. 4 ✓
  
4. Purkinje image which is inverted
  - A. 1st
  - B. 2nd
  - C. 3rd
  - D. 4th ✓
  
5. Placido's disc use which Purkinje image
  - A. 1st ✓
  - B. 2nd
  - C. 3rd
  - D. 4th

**Purkinje images are also known as Purkinje reflexes and as Purkinje–Sanson images.**

**1st Purkinje image is the reflection from the anterior surface of the cornea.**

**2nd Purkinje image is the reflection from the posterior surface of the cornea.**

**3rd Purkinje image is the reflection from the anterior surface of the lens.**

**4th Purkinje image is the reflection from the posterior surface of the lens.**

**First 4 are convex surfaces, but 4th is Concave so unlike others 4th is inverted imimage**

6. Digital tonometry is done using
  - A. Fingers ✓
  - B. Schiottz tonometer
  - C. Applanation tonometer
  - D. Non contact tonometer

## Clinical methods in Ophthalmology

7. Most accurate measurement of IOP

- A. Digital tonometry
- B. Schiottz tonometry
- C. Applanation tonometry ✓
- D. All

8. If Central Corneal Thickness (CCT) is higher than normal, the original IOP will be \_\_\_\_\_ IOP measured using tonometer.

- A. Less than ✓
- B. More than
- C. Same as
- D. Zero

9. Advantage of schiottz tonometry include all except

- A. Accurate ✓
- B. Easy to use
- C. Cheap
- D. Portable

10. Central Corneal Thickness (CCT) is measured using

- A. Tonometer
- B. Keratometer
- C. Pachymeter ✓
- D. Gonioscope

11. In direct ophthalmoscopy image magnification is

- A. No magnification
- B. 3-5 times
- C. 10 times
- D. 15 times ✓

12. In direct ophthalmoscopy image is

- A. Virtual and irect ✓
- B. Virtual and inverted
- C. Real and irect
- D. Real and inverted

13. In indirect ophthalmoscopy image is

- A. Virtual and irect
- B. Virtual and inverted
- C. Real and irect
- D. Real and inverted ✓

## Clinical methods in Ophthalmology

14. Distant direct ophthalmoscopy is performed at

- A. 25mm
- B. 25 cm ✓
- C. 1m
- D. 6m

15. In indirect ophthalmoscopy Area of field seen is

- A. Upto macula
- B. Upto lamina cribrosa
- C. Upto ora serrata ✓
- D. Upto equator

16. In retinoscopy, if the distance between patient and examiner is increased, the distance correction needed will

- A. Increase
- B. Decrease ✓
- C. Remain same
- D. None

17. Retinoscopy is

- A. Subjective method of finding the refractive error
- B. Objective method of finding the refractive error ✓
- C. Subjective method of Correcting the refractive error
- D. Objective method of Correcting the refractive error

18. In retinoscopy using plane mirror at 1m, Movement of red reflex opposite to the movement of the retinoscope indicate

- A. Myopia more than 1 D ✓
- B. Myopia less than 1 D
- C. Myopia of 1 D
- D. Hypermetropia

19. In retinoscopy, drug correction for Phenyl ephrine is

- A. 1.00D
- B. 0.75D
- C. 0.50D
- D. 0.00D ✓

20. In wet retinoscopy using Atropine at 1m, No movement of red reflex indicate

- A. Myopia of 1D
- B. Myopia of 1.5D
- C. Myopia of 2D ✓
- D. Myopia of 2.5D

## Clinical methods in Ophthalmology

21. In retinoscopy, if the distance between patient and examiner is increased, the distance correction needed will

- A. Increase
- B. Decrease ✓
- C. Remain same
- D. None

22. Retinoscopy is

- A. Subjective method of finding the refractive error
- B. Objective method of finding the refractive error ✓
- C. Subjective method of Correcting the refractive error
- D. Objective method of Correcting the refractive error

23. In retinoscopy using plane mirror at 1m, Movement of red reflex opposite to the movement of the retinoscope indicate

- A. Myopia more than 1 D ✓
- B. Myopia less than 1 D
- C. Myopia of 1 D
- D. Hypermetropia

24. In retinoscopy, drug correction for Phenyl ephrine is

- A. 1.00D
- B. 0.75D
- C. 0.50D
- D. 0.00D ✓

25. In wet retinoscopy using Atropine at 1m, No movement of red reflex indicate

- A. Myopia of 1D
- B. Myopia of 1.5D
- C. Myopia of 2D ✓
- D. Myopia of 2.5D

26. FRIEND Test can be used for

- A. refinement of final sphere in refraction
- B. Assessment of BSV
- C. Both ✓
- D. None

**FRIEND test can be used as alternative to Worth 4 dot test and Duochrome test. In FRIEND test, Letters RED is in red colour and FIN in green colour. For subjective refinement, If RED is clear eye is myopic, and if FIN is clear eye is hypermeropic. If both similar emmetropic.**

## Clinical methods in Ophthalmology

**For BSV put red filter before RE and green before LE and ask patient to read.  
If reads only RED, LE suppression. If reads only FIN, RE suppression.  
If letters are not in order or overlapping, Diplopia. Normal person see FRIEND correctly.**

27. Worth's Four Dot Test can be used for

- A. refinement of final sphere in refraction
- B. Assessment of BSV ✓
- C. Both
- D. None

28. In Worth's Four Dot Test, patient with paralytic squint see how many dots

- A. 2
- B. 3
- C. 4
- D. 5 ✓

**Diplopia is associated with paralytic squint, person with diplopia will see 5 dots in Worth 4 dot test.**

29. In Worth's Four Dot Test, normal person see how many dots

- A. 2
- B. 3
- C. 4 ✓
- D. 5

30. In Worth's Four Dot Test, if patient with squint see 4 dots condition is

- A. Orthophoria
- B. Paralytic squint
- C. Abnormal retinal correspondence ✓
- D. Squint patients will not see 4 dots

**Abnormal retinal correspondence (ARC) is also called as Anomalous retinal correspondence**

31. Fluorescein is used for evaluation of

- A. Corneal aberrations
- B. Dry eye
- C. Retinopathy
- D. All ✓

### Uses of Fluorescein

- **For identification of corneal epithelial defects by fluorescein staining**
- **For examination of corneal ulcer to study morphology of the ulcer**
- **In dry eye evaluation for performing T-BUT**

## Clinical methods in Ophthalmology

- In evaluation of patient with watering eye for fluorescein dye disappearance test and Jones tests
  - Seidel's test to identify leak from anterior chamber (in traumatic corneal tear or postoperative shallow anterior chamber after cataract surgery)
  - Fundus fluorescein angiography to study retinal and choroidal circulation . . . .
- .Evaluation of donor corneal endothelium in eye bank
- Hard contact lens fitting

32. Imaging of choroid is done using

- A. Fundus fluorescein angiography
- B. Indocyanine green angiography ✓
- C. Optical coherence tomography
- D. Heidelberg retinal tomography

**Indocyanine dye remains in the choriocapillaris in contrast to fluorescein, which extravasates from choriocapillaris, hence it allows imaging of choroid.**

33. Seidel's Test is done using

- A. Fluorescein ✓
- B. Indocyanine green
- C. Rose Bengal
- D. Lissamine Green

### **Seidel's Test**

**Seidel's test is done under slit lamp. The suspected site of wound leak is stained with fluorescein and the fluorescein pattern is observed for dilution, which indicates leak of aqueous (aqueous if leaking mixes with fluorescein thereby diluting fluorescein) from anterior chamber.**

34. Schirmer's Test-1 measure

- A. Total secretion ✓
- B. Reflex secretion
- C. Basal secretion
- D. Break up time

### **Schirmer's Test I**

- 1. Schirmer's test I measures the total tear secretions.**
- 2. It is performed with Schirmer's test strip, (a Whatman filter paper 5 by 35 mm strip), which is folded at 5 mm and kept in lower conjunctival fornix. The test strip is kept in the lower fornix for 5 minutes and the amount of wetting on the filter paper is noted.**
- 3. Wetting up to or more than 15 mm—normal.**
- 4. Wetting between 10 and 15 mm—borderline or mild dry eye.**
- 5. Wetting between 5 and 10 mm—moderate dry eye.**
- 6. Wetting less than 5mm—severe dry eye.**

## Clinical methods in Ophthalmology

### Schirmer's Test II

1. Schirmer's test II is done to measure reflex secretions.
2. It is performed in similar way as first test except that nasal mucosa is rubbed by a cotton bud to irritate it to measure reflex secretions.

### Schirmer's Basal Secretion Test

Schirmer's basal secretion test is performed similar to test I except that conjunctival fornix is anesthetized before performing the test.

35. Fluorescein dye disappearance test (FDDT) is done for evaluation of

- A. Dry eye
- B. Tear film break up time
- C. Lacrimal outflow ✓
- D. Leak from anterior chamber

36. Amsler grid is used for examination of

- A. Central visual field ✓
- B. Fundus
- C. Visual acuity for distance
- D. Contrast sensitivity

37. Hruby lens used for fundus examination is

- A. Concave ✓
- B. Convex
- C. Cylindrical
- D. Combination of lenses

**Hruby lens used for fundus examination is Concave with power -58.6 which neutralize optical power of eye**

38. In blue light, Sodium fluorescein stained cornea appears as

- A. Blue
- B. Yellow
- C. Green ✓
- D. Red

39. In aphakia there is absence of following Purkinje-Sanson's images

- a. 1st and 2nd
- b. 3rd
- c. 4th
- d. 3rd and 4th ✓

40. The normal intraocular pressure is (Schiotz)

- a. 10-15 mm Hg
- b. 10-20 mm Hg ✓

## Clinical methods in Ophthalmology

c. 25-30 mm Hg

d. less than 10 mm Hg

41. The most accurate method of measuring IOP is

a. digital

b. applanation ✓

c. Schiötz

d. gonioscopy

42. Near vision is recorded at a distance of

a. 10 cm

b. 25 cm

c. 33 cm ✓

d. 50 cm

43. Distant vision is recorded at a distance of

a. 20 ft ✓

b. 6 ft

c. 10ft

d. 60 ft

44. Normal field of vision extends on the nasal side to

a. 40°

b. 50°

c. 60° ✓

d. 70

45. Peripheral field of vision is tested by

a. Bjerrum's screen

b. Snellen's chart

c. Lister's perimeter ✓

d. indirect ophthalmoscopy

46. Central field of vision is limited up to

a. 20°

b. 30° ✓

c. 40°

d. 50°

47. Distant direct ophthalmoscopy is done at a distance of

a. 1 m

b. 6 m

c. 22 cm ✓

## Clinical methods in Ophthalmology

d. close to the face

48. In indirect ophthalmoscopy the image is

- a. inverted, real, magnified ✓
- b. erect, real, magnified
- c. erect, virtual, magnified
- d. none of the above

49. In direct ophthalmoscopy the image is

- a. virtual, erect, magnified ✓
- b. virtual, inverted, condensed
- c. real, inverted, magnified
- d. real, erect, condensed

50. Periphery of retina is best visualized with

- a. direct ophthalmoscopy
- b. indirect ophthalmoscopy ✓
- c. retinoscopy
- d. USG

51. 'A' wave in ERG corresponds to activity in

- a. rods ✓
- b. pigment epithelium
- c. inner retinal layer
- d. nerve bundle layer

52. Campimetry is used to measure

- a. squint
- b. angle of deviation
- c. pattern of retina
- d. field charting ✓

53. Angle of anterior chamber is studied with

- a. indirect ophthalmoscopy
- b. gonioscopy ✓
- c. retinoscopy
- d. amblyoscope

54. RAF ruler is used for evaluation of

- A. Heterophoria
- B. Convergence and accommodation ✓
- C. Field of vision
- D. Intra ocular pressure

## Clinical methods in Ophthalmology

55. Maddox wing is mainly used for evaluation of

- A. Heterophoria ✓
- B. Heterotropia
- C. Paralytic squint
- D. All

56. Hess screen is used for evaluation of

- A. Central visual field
- B. Peripheral visual field
- C. Diplopia ✓
- D. Heterophoria

57. Forced duction test is used to differentiate

- A. Heterophoria and heterotropia
- B. Paralytic and non paralytic squint
- C. Paralytic and restrictive squint ✓
- D. None

58. Double Maddox rod test is used for evaluation of

- A. Double elevator palsy
- B. Cyclodeviations ✓
- C. Restrictive squint
- D. Convergence insufficiency

59. Lister's perimeter is used for evaluation of

- A. Central visual field
- B. Peripheral visual field ✓
- C. Both
- D. None

60. Bjerrum's screen is used for evaluation of

- A. Central visual field ✓
- B. Peripheral visual field
- C. Both
- D. None

61. Automated perimeters like Humphrey field analyser is used for evaluation of

- A. Central visual field
- B. Peripheral visual field
- C. Both ✓
- D. None

## Clinical methods in Ophthalmology

62. Active Force Generation Test (AFGT) is used to differentiate

- A. Heterophoria and heterotropia
- B. Paralytic and non paralytic squint
- C. Paralytic and restrictive squint ✓
- D. None

62. In Hirschberg corneal reflex test, if the light reflex is seen on limbus the approximate squint measurement is

- A. 15°
- B. 30°
- C. 45° ✓
- D. 70°

63. In cover uncover test, if the uncovered eye moves outward to take fixation, condition is

- A. Exophoria
- B. Esophoria ✓
- C. Hyperphoria
- D. Cyclophoria

64. Average normal Vertical fusional reserve is

- A. 0-1°
- B. 1.5°-2.5° ✓
- C. 3°-5°
- D. 20°-40°

**Measurement of fusional reserve can be done with the help of a synoptophore or prism bar. The normal values of fusional reserve are as follows:**

- **Vertical fusional reserve: 1.5°–2.5°**
- **Horizontal negative fusional reserve (abduction range): 3°–5 °**
- **Horizontal positive fusional reserve (adduction range) : 20°–40°.**

65. Less screen is used for evaluation of

- A. Central visual field
- B. Peripheral visual field
- C. Diplopia charting ✓
- D. Heterophorias

66. Phoropter is used for

- A. Refraction ✓
- B. Field testing
- C. Orthoptic exercises
- D. IOP measurement

## Clinical methods in Ophthalmology

67. Optokinetic nystagmus test is done for measuring

- A. Nystagmus
- B. Squint
- C. Vision ✓
- D. Field of vision

68. Preferential looking test is done for vision screening of

- A. Infants ✓
- B. Young adults
- C. Geriatric
- D. Illiterate

69. Which of the following test is used for objective measurement of visual acuity

- A. Snellen's chart
- B. Visually evoked response ✓
- C. Preferential looking test
- D. Logmar chart

70. Prism bar is used for measurement of

- A. Phorias
- B. Tropias
- C. Both ✓
- D. None

## MCQs- Lasers in Ophthalmology

1. LASIK is done using
  - A. Argon laser
  - B. Diode laser
  - C. Nd: YAG laser
  - D. Excimer laser ✓
2. Nd:YAG laser is used in treatment of
  - A. Posterior capsule opacification
  - B. Angle closure glaucoma
  - C. Both ✓
  - D. None
3. Not a component of Nd:YAG laser
  - A. Neodymium
  - B. Yttrium
  - C. Argon ✓
  - D. Garnet
4. Mechanism of excimer laser
  - A. Photocoagulation
  - B. Photodisruption
  - C. Photoablation ✓
  - D. All the above
5. Laser used in management of open angle glaucoma
  - A. Argon laser ✓
  - B. Diode laser
  - C. Nd: YAG laser
  - D. Excimer laser
6. Colour of Nd:YAG laser
  - A. Red
  - B. Green
  - C. Blue
  - D. Colourless ✓

**Nd:YAG (neodymium-doped yttrium aluminium garnet; Nd:Y<sub>3</sub>Al<sub>5</sub>O<sub>12</sub>) is a crystal that is used as a lasing medium for solid-state lasers.**

7. Frequency-doubled Nd:YAG lasers are used in
  - A. Refractive surgery
  - B. Diabetic retinopathy ✓
  - C. Both
  - D. None

## MCQs- Lasers in Ophthalmology

8. Nd:YAG laser comes under
- A. Ultraviolet
  - B. Infrared ✓
  - C. X-ray
  - D. Visible spectrum
9. Laser commonly used for peripheral iridotomy
- A. Nd:YAG ✓
  - B. Argon
  - C. Excimer
  - D. All
10. Photorefractive keratectomy (PRK) is done using
- A. Nd:YAG
  - B. Argon
  - C. Excimer ✓
  - D. All

## MCQs- Ocular Pharmacology

1. Sulphonamide drug is

- A. Antibiotic ✓
- B. Antifungal
- C. Antiviral
- D. Antiallergic

2. Drug pencillin is

- A. Antibiotic ✓
- B. Antifungal
- C. Antiviral
- D. Antiallergic

3. Cephalosporin is

- A. Antibiotic ✓
- B. Antifungal
- C. Antiviral
- D. Antiallergic

4. Trifluorothymidine (TF3) is

- A. Antibiotic
- B. Antifungal
- C. Antiviral ✓
- D. Antiallergic

5. Adenine arabinoside (Ara-A, Vidarabine) is

- A. Antibiotic
- B. Antifungal
- C. Antiviral ✓
- D. Antiallergic

6. Which of the following drugs is not an anticholinergic?

- A. Atropine
- B. Cyclopentolate
- C. Tropicamide
- D. Phenylephrine ✓

7. Which of the following drugs acts the fastest?

- A. Atropine
- B. Cyclopentolate
- C. Tropicamide ✓
- D. Phenylephrine

## MCQs- Ocular Pharmacology

8. Which of the following drugs has the least effect on accommodation?

- A. Tropicamide
- B. Homatropine
- C. Phenylephrine ✓
- D. Cyclopentolate

9. Which of the following drugs could raise blood pressure?

- A. Atropine
- B. Cyclopentolate
- C. Tropicamide
- D. Phenylephrine ✓

10. Recovery time is more for

- A. Atropine ✓
- B. Cyclopentolate
- C. Phenylephrine
- D. Phenylephrine

11. Miotics are also known as

- A. Parasympathomimetic drugs ✓
- B. Sympathomimetic drugs
- C. Parasympatholytic drugs
- D. Sympatholytic drugs

12. Parasympathomimetic drugs are

- A. Cholinergic drugs ✓
- B. Adrenergic agonists
- C. Beta-adrenergic blockers
- D. Carbonic Anhydrase Inhibitors

13. Hyper osmotic agents will

- A. Raise IOP
- B. Lower IOP ✓
- C. No effect on IOP
- D. None

14. Carbonic anhydrase inhibitors lower IOP by

- A. Decreasing trabecular outflow
- B. Increasing trabecular outflow
- C. Increasing uveo-scleral outflow
- D. Decreasing aqueous production ✓

## MCQs- Ocular Pharmacology

15. Beta blockers lower IOP by
- A. Decreasing trabecular outflow
  - B. Increasing trabecular outflow
  - C. Increasing uveo-scleral outflow
  - D. Decreasing aqueous production ✓
16. Which of the following is not a Beta blocker
- A. Timolol
  - B. Mannitol ✓
  - C. Betaxolol
  - D. Levobunolol
17. The following are false about latanoprost:
- A. It causes conjunctival hyperaemia
  - B. It causes a break down of the blood ocular barrier
  - C. It causes miosis ✓
  - D. It increases uveo-scleral outflow
18. Treatment of choice for Mycotic corneal ulcer
- A. Ciprofloxacin
  - B. Acyclovir
  - C. Natamycin ✓
  - D. Dexamethasone
19. Dexamethasone is \_\_\_\_\_ corticosteroid
- A. Short acting
  - B. Intermediate acting
  - C. Long acting ✓
  - D. It is non steroidal
20. Prednisolone is \_\_\_\_\_ corticosteroid
- A. Short acting ✓
  - B. Intermediate acting
  - C. Long acting
  - D. It is non steroidal
21. Side effect of corticosteroid
- A. Cataract
  - B. Glaucoma
  - C. Delayed wound healing
  - D. All ✓

## MCQs- Ocular Pharmacology

22. Flurbiprofen is

- A. Corticosteroid
- B. Non steroidal anti inflammatory drug ✓
- C. Anti fungal
- D. Anti viral

23. Drugs which increase uveoscleral outflow

- A. Pilocarpine
- B. Epinephrine ✓
- C. Timulol
- D. Azetazolamide

24. Mydriatics stimulate what division of the ANS?

- A. Cholinergic
- B. Adrenergic ✓
- C. Neither
- D. Both depending on dosage

25. Cycloplegic drugs are used in all except

- A. Gonioscopy ✓
- B. Retinoscopy
- C. Funduscopy
- D. Uveitis treatment

26. Beta blockers are contraindicated in ? A. A. Hypotension

- B. Asthma
- C. Depression
- D. All ✓

27. Antiviral drugs include the following except

- A. Acyclovir
- B. Ketoconazole ✓
- C. Iodo-deoxyuridine
- D. Trifluorothymidine

28. Scopolamine(Hyoscine) is used as

- A. Miotic
- B. Cycloplegic ✓
- C. Anti glaucoma drug
- D. Local anaesthetic

29. Tiabendazole is used as

- A. Antifungal drug

## MCQs- Ocular Pharmacology

- B. Antiparasitic drug
- C. Antiviral drug
- D. Both A&B ✓

30. Which of the following solution is used as intraocular irrigating solution

- A. Compound sodium lactate
- B. Balanced salt solution (BSS)
- C. Both ✓
- D. None

# MCQs - Systemic and Community Ophthalmology

1. In WHO classification of xerophthalmia X2 refers to
- A. Night blindness
  - B. Conjunctival xerosis
  - C. Bitots spots
  - D. Corneal xerosis ✓

## WHO classification of xerophthalmia

**XN -Night blindness**

**X1A -Conjunctival xerosis**

**X1B -Bitot's spots**

**X2 -Corneal xerosis**

**X3A -Corneal ulceration/keratomalacia affecting less than one-third corneal surface**

**X3B -Corneal ulceration/keratomalacia affecting more than one-third corneal surface**

**XS -Corneal scar due to xerophthalmia**

**XF -Xerophthalmic fundus.**

2. Onchocerciasis is an infection caused by
- A. Bacteria
  - B. Virus
  - C. Fungi
  - D. Parasite ✓
3. Snowflake Cataracts may be seen in patients with
- A. Diabetes ✓
  - B. Hypertension
  - C. High cholesterol
  - D. hypoglycemia
4. Deficiency of vitamin D may be associated with
- A. zonular cataract
  - B. papilloedema
  - C. increased lacrimation
  - D. All ✓
5. Vision 2020: The Right to Sight is a
- A. National programme
  - B. State level programme
  - C. District level programme
  - D. Global programme ✓

## MCQs - Systemic and Community Ophthalmology

6. Under Universal Immunisation Program (UIP) a child is given total \_\_\_\_\_ of Vitamin A.

- A. 1 dose
- B. 6 dose
- C. 9 dose ✓
- D. 12 dose

7. Under Universal Immunisation Program (UIP) Vitamin A is given

- A. Orally ✓
- B. Intra muscular inj
- C. Sub cutaneous inj
- D. Intravenous inj

8. Under Universal Immunisation Program (UIP) first dose of Vitamin A is given at

- A. Birth
- B. 1 month
- C. 6 month
- D. 9 month ✓

9. Ocular lesions seen in rubella (German measles) are

- A. Congenital microphthalmos
- B. Congenital cataract
- C. Chorioretinitis
- D. All ✓

**Ocular lesions seen in rubella (German measles) are congenital microphthalmos, cataract, glaucoma, chorioretinitis and optic atrophy**

10. Ocular involvement of Diphtheria include

- A. Membranous conjunctivitis
- B. Corneal ulceration
- C. Paralysis of EOM
- D. All ✓

**In Ocular involvement of Diphtheria. There may occur: membranous conjunctivitis, corneal ulceration, paralysis of accommodation and paralysis of extraocular muscles**

11. World sight day is observed annually on

- A. October 8
- B. October 10
- C. October 12
- D. None ✓

**World sight day is observed annually on 2nd Thursday of October.**

**World sight day 2019 was on October 10 and World sight day 2020 will be on October 8**

## MCQs - Systemic and Community Ophthalmology

12. Eye donation fortnight is observed annually during the month of

- A. August
- B. September
- C. August- September ✓
- D. October

**Eye donation fortnight is observed annually from August 25 to September 8**

13. World glaucoma week is observed annually during the month of

- A. March ✓
- B. April
- C. October
- D. August

**World glaucoma week is observed annually for 1 week starting from 2nd Sunday of March.**

14. World health day is on

- A. April 7 ✓
- B. June 5
- C. October 15
- D. November 14

**June 5- environment day**

**October 15- white cane day**

**November 14- diabetes day**

15. Globally, Main cause of low vision is

- A. Cataract
- B. Refractive errors ✓
- C. Corneal opacity
- D. Glaucoma

**Main cause of blindness is cataract**

16. What is the definition of blindness under NPCB

- A. Corrected Vision less than 6/60 in both eyes
- B. Corrected Vision less than 3/60 in any eye
- C. Corrected Vision less than 3/60 in both eyes ✓
- D. No perception of light in both eyes

17. What is the definition of blindness under WHO

- A. Corrected Vision less than 6/60 in both eyes
- B. Corrected Vision less than 3/60 in any eye
- C. Corrected Vision less than 3/60 in both eyes ✓
- D. No perception of light in both eyes

## MCQs - Systemic and Community Ophthalmology

18. What is the definition of low vision

- A. Best corrected vision 6/9- 3/60
- B. Best corrected vision less than 6/18- 3/60 ✓
- C. Best corrected vision less than 6/18- 6/60
- D. Best corrected vision 6/9- 6/60

19. Percentage of blindness for a person with one eye blind and other eye normal

- A. 30% ✓
- B. 40%
- C. 50%
- D. 100%

20. Considering visual field, in blindness calculation

- A. Visual field less than 20° is considered as blindness
- B. Visual field less than 10° is considered as blindness ✓
- C. Vision should be less than 3/60 even if visual field is less than 10°
- D. Visual field is not considered for blindness calculation

21. SAFE strategy implemented for control of

- A. Onchocerciasis
- B. Trachoma ✓
- C. Xerophthalmia
- D. Conjunctivitis

22. Not a part of SAFE strategy

- A. Steroids ✓
- B. Antibiotics
- C. Facial hygiene
- D. Environmental change

23. Vision 2020 has been adopted in NPCB in the year

- A. 1999
- B. 2001 ✓
- C. 2007
- D. 2010

24. Main cause of blindness in India

- A. Refractive error
- B. Cataract ✓
- C. Glaucoma
- D. Diabetic retinopathy

## MCQs - Systemic and Community Ophthalmology

25. Main cause of blindness in developed countries is

- A. Cataract
- B. Glaucoma
- C. Diabetic retinopathy
- D. ARMD ✓

26. International Agency for the Prevention of Blindness (IAPB) formed in the year

- A. 1975 ✓
- B. 1976
- C. 1978
- D. 1999

27. National Programme for Control of Blindness (NPCB) launched in the year

- A. 1986
- B. 1976 ✓
- C. 1978
- D. 1968

**India is the first country in the world to launch a national level blindness control program, even before WHO launched its first blindness control program**

**National Programme for Control of Blindness (NPCB) is now renamed to National Programme for Control of Blindness and Visual Impairment (NPCBVI)**

28. WHO: Prevention of Blindness Programme (PBP) launched in the year

- A. 1975
- B. 1978 ✓
- C. 1999
- D. 2001

29. Vision 2020: The Right to Sight launched in the year

- A. 1986
- B. 1978
- C. 1999 ✓
- D. 2001

30. Vision For the Future (VFTF) program launched in the year

- A. 1975
- B. 1978
- C. 1999
- D. 2001 ✓

## MCQs- Uncategorized

1. Which of these common eye conditions can cause monocular diplopia?

- a) squint
- b) Dry Eye
- c) Cataract ✓
- d) None of the above

### Causes of Unocular diplopia

#### Remember ABCD

Astigmatism

Behavioral: psychogenic

Cataract (**Cataract cause polyopia**)

Dislocated lens

2. Which of the following can cause post operative diplopia?

- a) Cataract surgery
- b) Retinal detachment surgery
- c) Orbital Surgery
- d) All of the above ✓

3. In a frightened man, the pupil shall

- a. dilate ✓
- b. constrict
- c. remain unaltered
- d. first dilate and then constrict

4. Removal of the eye leaving the extra ocular muscles and remaining orbital contents intact

- A. Evisceration
- B. Enucleation ✓
- C. Exenteration
- D. Dacryocystectomy

5. A person suffered blunt trauma to the right eye with immediate loss of vision , on examination the anterior chamber is deep, condition may be

- A. lens dislocation ✓
- B. Traumatic cataract
- C. Secondary glaucoma
- D. Optic neuritis

6. A person approach you with a chemical fall in eye, what will be the first thing to do

- A. Irrigation ✓
- B. Antibiotics
- C. Bandaging
- D. Steroids

## MCQs- Uncategorized

7. In chalazion operation, incision given in conjunctiva is usually

- A. Horizontal
- B. Vertical ✓
- C. Oblique
- D. Any

8. Intermediate Term Storage of donor cornea is done using

- A. Moist chamber
- B. MK- medium
- C. K-sol medium ✓
- D. Cryopreservation

### Short-term Storage and Preservation

- Moist chamber-donor eye can be kept in a sterile glass jar and stored in a temperature 4°C and stored for 2 days.
- McCarey and Kaufman (MK) medium offers a duration of 2 to 4 days at 4°C for the utilization of donor material.

### Intermediate Term Storage

- K-sol medium containing chondroitin sulfate is used for the storage of cornea at 4°C for about two weeks.
- Minnesota system of organ culture allows preservation for 35 days.

### Longer Duration Storage

- Cryopreservation in liquid nitrogen at 197°C for an year.

9. Eclipse burn (Solar Retinitis or Foveomacular Retinitis) is due to exposure to

- A. Ultraviolet
- B. Infrared ✓
- C. X-ray
- D. Gamma rays

10. Commotio Retinae (Berlin's Edema) occur mainly due to

- A. Penetrating injury
- B. Blunt injury ✓
- C. Exposure to radiation
- D. Steroids