MEDICAL GLOBE

4TH YEAR MCQ POINTS

REFRACTIVE ERRORS:

- Temporal crescent-**myopia**
- Vision blurred- **hyper metropolis and presbyopia**
- Newborn is always at birth- **astigmatic**
- Astigmatism is a type of - **curvature ametropia**
- Optical condition of rue in with traction of two eyes differ - **anisometropia**
- Radical keratometry- **myopia**
- Prisms treat -heterophora and heterotropia
- Retinoscopy from distance of **1 m**
- DOC IN PUPPILARY DILATION IN CHILDREN **ATROPINE**
- Frequent change in glasses- **closed angle glaucoma**

CONJUNCTIVA

- Angular conjunctivitis caused by **MORAX AXENFELD BACILLUS**
- HP inclusion bodies in trachoma - **intra cytoplasm**
- Herbert pots seen in **limbus**
- **Pinguecula** is due to byline infiltrates
- Treatment of angular conjunctive **zinc oxide**
- **Trantas** is seen in vernal

CORNEA

- Penomocoocus can't invade **Cornea**
- Ulcer serpens caused by **penomoccous**
- Ectatic cicatrix incarcerated -**anterior staphyloma**
- Common in hypon is **penomoccous**
- Satellite nodules in **virus**
- Atheromatous corneal ulcers is **allergic**
- Hudson Stahli lines are **yellow brown**

- Salmon patches in **interstitial keratits**
- Arcus senilis is **lipid**
- Not used for tattoo silver nitrate
- Band shaped karatophaty hy line degradation
- Facicular ulcers present in Moorens ulcers

SCLERA

- intense icy is spring catarrh
- Epi and scleritis is common in collagen defect
- Blue sclera associated with deafness and fragilis ossium
- Episclera main atropin nahi dani

Important points for LIDS:

- EPICANTHUS - fold of skin situated above and sometimes covering the inner **canthus.**
- LAGOPHTHALMOS - incomplete closure of the palpebral aperture.
- TYLOSIS- hypertrophic and thickening of eyelid margin.
- FASIA LATA SLING SURGERY- if multiple failure of surgeries
- PSUDOPTOSIS - phthisic bulbi
- Common lid cancer -BCC
- BLASKOVICS OPERATION - ptosis

LACRIMAL SAC:

- MIKULICZ'S SYNDROME - symmetrical enlargement of lacrimal and salivary gland's
- TEAR INCLUDE- protein, NaCl , SUGAR
- COMMON TUMOUR OF LACRIMAL GLANDS- mixed cell tumor
- TOC IN CONGENITAL DACRYOCYSTITIS - stringing and probing NOT DCR
- TEARS IN BABY - 4 weeks

Lens:

- EXPULSIVE HAEMORRHAGE- lens extraction
- POLYOPIA -cortical cataract
- RING OF SOMMERRING - type of after cataract
- ELSCHNIGS PEARLS - Aries from cubical cells underneath lens capsule
- IMMATURE CATARACT - diagnostic feature is black shadow visible against red fundal glow
- BOTH CONGENITAL AND ACQUIRED CATARACT- polar
- IOL is mostly made of PMMMA NOT SILICON
- POLYCHROMATIC LUSTRE - seen in complicated cataract
- LENS ARE PRESCRIPTIONIS GIVEN AFTER CATARACT OPERATION- 6 weeks
- RADIATION causes posterior sub capsular cataract\

Important points of STRABISMUS:

- WEBERS SYNDROME -3rd nerve palsy
- ANISOPHORIA - variable according to direction of gaze
- MINERS NYSTAGMUS- rotatory
- VERTICAL RECTI -23 degree
- CARDINAL POSITION OF GAZE-6
- WORTH FOUR DOT PATIENT HAS DIPLOPIA - sees two red three green lights
- RIGHT SUPERIOR OBLIQUE – levodepression

DIAGNOSTIC POINTS OF EYE

Sign/Symptoms

1. **Chalazion** = gradual painless swelling of upper eyelid (conjunctiva is red or purple over the nodule or fleshy mass if ruptured)

2. **Hordeolum Externum (Stye)** = pain, tenderness, red, edematous eyelid (pus points toward lid margin with a lash in centre).

3. **Hordeolum Internum** = pain, red, swollen, severe tenderness in eyelid (pus appear as yellow spot shining through conjunctiva, when burst appear as granulation tissue).

4. **Ulcerative blephritis** = gluing of eyelashes, crust formation around the bases of lashes, may be matted together by yellow crust (when removed behind a tiny bleeding ulcer).

5. **Squamous blepharitis** = deposition of whitish material at lid margin, shiny waxy appearance of eyelid margin, dandruff like desquamation which give rise to yellow greasy fine flakes & scales on lid margin.

6. **Meibomianitis (posterior blepharitis)** = burning sensation in eyes, white frothy (foam like) secretion on eyelid margin (orifice of meibomian glands show pouting & capped by small oil globules, show as vertical yellow shining lines through tarsal conjunctiva).

7. **Phthiriasis palpebrarum** = severe itching & irritation, numerous nits & eggs adherent to eyelashes, blood stained debris present on lid margin.

8. **Trichiasis** = foreign body sensation, lacrimation, photophobia, conjunctival redness, corneal epithelial defect & ulceration.

9. **Entropion** = symptoms are same as trichiasis, lid margin is found in turned & lashes rubbing the cornea & conjunctiva.

10. **Ectropion** = epiphora (main symptom), chronic conjunctivitis, exposure keratitis, eczema, dermatitis.

Grades of ectropion :

• **Grade I -** punctum everted only.

• **Grade II -** lid margin everted & palpebral conjunctiva is visible.

• **Grade III -** Fornix also visible.

11. **Ptosis (blepharoptosis)** = cosmetic disfiguring, amblyopia if ptosis occurs below 9 years of age, squint, abnormal head posture (in bilateral)

12. **Pyogenic granuloma** = pinkish, pedunculated or sessile mass may bleed after minor trauma (fast growing vascularized proliferation of granulomatous tissue).

13. **Keratocanthoma** = firm, pinkish, indurated nodule covered with keratin. (Occur in adults)

14**. Capillary Hemangioma** = pinkish, red lesion which blanches with pressure & swells on crying, develop during 1sr year of life & start regress during 2nd year of life (common in females).

15. **Xanthelasma** = bilateral, appear as slightly raised creamy-yellowish, plaque like lesions (mostly occur near medial canthus & in middle age women with high blood lipids).

16. **Neurofibroma** = thickened nerves can be felt through skin as hard cords. (Benign nerve sheath tumor, Usually plexiform type, found with neurofibromatosis type I).

17. **Basal cell carcinoma of eyelid :**

• **Nodular** = appear as shiny, firm, indurated nodule with blood vessels on its surface (most common type).

• **Nodulo-ulcerative (Rodent ulcer)** = nodular lesion develop central ulceration & raised rolled edges with dilated blood vessels over lateral margins.

• **sclerosing or morpheaform** =appear as flat, indurated plaque due to infiltration (more aggressive), occur laterally beneath epidermis, impossible to delineate the margins of tumour.

18. Squamous cell carcinoma = arise from actinic keratosis.

• **Bowen's disease** = appear as roughened, scaly erythematous, hyperkeratotic, sharply demarcated patch or plaque.

• **Nodular type** = appear as hyperkeratotic nodule (may be confused with keratocanthoma).

• **Ulcerative form** = appear as ulcer having red base with sharply defined indurated & everted borders.

19. **Sebaceous gland carcinoma** = arise from meibomain gland, also arise from glands of zeis, occur most commonly on upper tarsal plate.

• **Nodular type** = appear as discrete painless nodule, stimulate chalazion.

• **Spreading** = appear as diffuse thickening of eyelid due to infiltration into dermis, stimulates to chronic blepharitis.

20. **Acute dacryoadenitis** = pain, discomfort, eyelid become red & swollen with typical S-shaped curve of its margin, painful proptosis with displacement of eyeball downward & inward.

21. **Chronic dacryoadenitis** = painless enlargement of lacrimal gland, S-shaped curve of eyelid margins, displacement of eyeball downward & inward, diplopia.

22. **Keratoconjunctivitis sicca** = foreign body sensation worse in wind or hot climate, presence of stringy mucous discharge & transient blurring of vision, pain worse with blinking due to development of **corneal epithelial filaments.**

23. **Congenital nasolacrimal duct obstruction** = epiphora, sticky mucoid or mucopurulent discharge accumulate on eyelid margin & lashes, positive regurgitation test. (bilateral involvement & manifest by the age of 3-4 weeks)

24. **Acute dacrocystitis** = sub-acute onset of painful redness, tenderness, mucopurulent discharge & swelling at the medial canthus associated with epiphora, regurgitation test is difficult to perform.

25. **Chronic dacrocystitis** = present with constant watering from eye, regurgitation test positive with reflux of watery, mucoid or mucopurulent discharge from puncti, mucocele formation may occur, may be associated with chronic unilateral conjunctivitis (more common than acute).

26. **Mucopurulent conjunctivitis** = on waking up the morning, eyes are frequently glued together & difficult to open due to accumulation of exudate during night, mild papillary reaction, flakes of mucous discharge present in the Fornix (pink eye).

27. **Purulent conjunctivitis** = hyperacute, extremely profuse & thick creamy pus leaking from eye, severe discomfort, pain occur when corneal involvement, periocular edema may present, deep red & velvety conjunctiva, severe chemosis of conjunctiva with or without membrane formation, corneal ulceration is common.

28. **Membranous conjunctivitis** = serous discharge, conjunctiva shows whitish membrane on palpebral & Fornix but not on bulbar conjunctiva, removal of diphtheric membrane cause tearing of epithelium & bleeding.

29. **Viral conjunctivitis** = watery discharge, redness of eye.

30. **Epidemic keratoconjunctivitis** = watering, redness, discomfort, photophobia, mostly bilateral, chemosis, subconjunctival hemorrhage, psuedomembrane formation, associated with superficial punctate keratitis, corneal infiltrates are found.

31. **Pharyngoconjunctival fever** = associated with fever & pharyngitis, less conjunctival signs & corneal involvement than epidemic keratoconjunctivitis.

32. **Picornavirus conjunctivitis** = bilateral red eyes with a profound watery discharge, subconjunctival hemorrhage, chemosis develop in

palpebral part, punctate keratitis (found in low socioeconomic status, crowding conditions, having poor hand washing practice).

33. **Herpes simplex virus conjunctivitis** = usually occur after the development of lid margin vesicles, watery discharge, chemosis & psuedomembrane, follicles develop in palpebral & fornix conjunctiva, corneal involvement without the development of subepithelial opacities, but superficial stromal opacities are found or it may progress to dendritic figures(multiple)

34. **Molluscum contagiosum conjunctivitis** = present with chronic unilateral irritation & mucoid discharge, pale waxy umbilicated nodule on lid margin, bulbar nodule may be present, punctate epithelial erosions & pannus may occur.

35. **Chlamydial conjunctivitis** = two forms : spore like infectious particles (elementary body), obligate intracellular particles (inclusion body).

36. **Trachoma** = Mac callan in 1908 classified into 4 stages by the presence of follicular hyperplasia, papillary hypertrophy, conjunctival scaring, corneal involvement :

• **Stage I** = minimal conjunctivitis, low grade conjunctival reaction, minimal discharge, immature follicles in upper tarsal conjunctiva, punctate epithelial keratitis in upper part of cornea.

• **Stage II** = active symptomatic stage, watering, photophobia, foreign body sensation, follicular hyperplasia (essential feature), papillary hypertrophy, corneal pannus, corneal ulceration common at advancing edge of the pannus.

• **Stage III** = active stage of disease, characterized by beginning of conjunctival scaring & development of complications (produce linear or stellate scars in conjunctiva), arlt's line & herbert's pit are found.

• **Stage IV** = inactive end stage without active inflammation but symptoms of complications due to cicatrization, opaque cornea with gross reduction in vision.

• **WHO STAGING** = TF (trachoma follicles), TI (trachomatous inflammation), TS (trachomatous conjunctival scaring), TT (trachomatous trichiasis), CO (corneal opacity over pupil).

37. Follicles on bulbar conjunctiva are pathognomic of trachoma (only expressible follicles among all type of follicular conjunctivitis)

38. **Adult inclusion conjunctivitis** = similar to acute mucopurulent conjunctivitis, superifical epithelial keratitis of upper half of cornea is most frequent finding.

39. **Ophthalmia neonatorum :**

• **chlamydial conjunctivitis** = mucopurulent discharge, mild papillary reaction, no follicular response, superior corneal pannus & conjunctival scaring may present (most common).

• **gonococcal conjunctivitis** = purulent discharge, psuedomembrane formation, edematous eyelids, keratitis is common.

• **Viral conjunctivitis** = blepharoconjunctivitis, keratitis (caused by HSV type 2)

• **chemical conjunctivitis** = mild conjunctival hyperaemia (caused by use of prophylactic silver nitrate or antibiotic drops).

40. **Allergic conjunctivitis** = itching, redness of eye.

• **Acute allergic rhino conjunctivitis** = transient acute attack of redness, watering, itching associated with sneezing & nasal discharge, lid edema, hyperaemia, chemosis, mild papillary reaction.

• **Vernal keratoconjunctivitis** = attacks are bilateral & recurrent, itching (main symptom), lacrimation, photophobia, redness, burning, foreign body sensation.

3 forms :

1. **Palpebral** (diffuse papillary hypertrophy, large papillae with hard flat-topped polygonal appearance resemble cobble stone or pavment

stone fashion, giant papillae produce cauliflower like excrescence, ropy sticky mucoid exudate, ptosis)

2. **Limbal** (gelatinous papillae on limbal conjunctiva, trantas dots are found)
3. **Mixed** (features of both palpebral & limbal form).

• **Atopic keratoconjunctivitis** = type I hypersensitivity reaction, associated with atopic dermatitis, asthma, micro papillae over tarsal & inferior forniceal conjunctiva, association with keratoconus & atopic cataract.

41. **Phlyctenular keratoconjunctivitis** = type IV hypersensitivity reaction, nodule may develop in conjunctiva or at limbus both cornea & conjunctiva resulting into marginal ulceration.

42. **Pterygium** = occur in hot climate, more common on nasal than temporal side, appear as fibrovascular growth in triangular fashion at the limbus, with the apex towards cornea.

43. **Psueso pterygium** = adhesion of conjunctiva to the peripheral cornea, may occur on any quadrant of cornea, probe can be passed under neck, diplopia may occur.

44. **Pingecula** = appear as yellowish white, slightly elevated, oval shaped mass on either side of cornea at limbus in interpalpebral region, usually bilateral.

45. **Xerophthalmia** = due to deficiency of vit A, night blindness, ocular foreign body sensation due to dryness, bitot spots & xerosis found on conjunctiva, lusterless appearance of cornea, punctate epithelial erosions & corneal ulceration, keratomalacial sterile corneal melting by colliquative necrosis which result in perforation, yellow white dots found in peripheral fundus, electroretinogram may be abnormal.

46. **Excess of vitamin A** = cause benign intracranial hypertension, raised ICP, papilloedema, yellow discoloration resembling jaundice, skeletal pain.

47. **Refractive power of cornea** = +43 diopters.

48. **Refractive index of cornea** = 1.376

49. **Layers of cornea** = epithelium, bowman's membrane, stroma, descemet's membrane, endothelium.

50. **Bacterial corneal ulcer** = 4 stages:

1. **Infiltrative stage** = yellowish or whitish corneal opacity with overlying epithelial edema (due to injury to the epithelium)
2. **Active stage** = greyish white swollen cornea with necrosis of the ulcer base, reactive hyperaemia, pain photophobia, lacrimation, dec visual acquity & hypopyon (due to necrosis & sloughing off of the epithelium)
3. **Regression stage** = leukocytes develop around ulcerated cornea, remaining surrounding cornea becomes clear (due to natural host mechanism or by treatment).
4. **Cicatrization stage** = progressive epithelization of ulcer with scarring (due to healing by new stromal lamellae formed by keratocytes).

51. **Fungal keratitis (keratomycosis)** = same clinical features as in bacterial, filamentous keratitis (greyish white ulcer has feathery edges), satellite lesions & immune ring is found.

52. **Acanthamoeba keratitis** = blurred vision, severe pain, photophobia, epithelial pseudodendrites & ring abscess is found. **Perineural infiltrates (radial keratoneuritis) & enlargement of corneal nerves are pathognomic sign.**

53. **Acute epithelial keratitis (Dendritic ulcer/geographical ulcer/amoeboid ulcer)** = symptoms of corneal involvement, ciliary congestion, reduced corneal sensitivity, corneal staining shows linear branching tree shaped ulcer.

54. **Stromal necrotic keratitis** = corneal strona appears cheesy & necrotic, associated with anterior uveitis (keratic precipitates found).

55. **Disciform keratitis** = disc shaped, localized greyish area of stromal edema with localized keratic precipitates, reduced corneal sensitivity.

56. **Herpes zoster ophthamicus** = microdendritic ulcers are found (plaque like with no central ulceration), Hutchison's sign (rashes at the tip of nose).

57. **Mooren's ulcer** = begins as excavating ulceration at the periphery of cornea near limbus, it has raised border & overhanging ridge at advancing edge, spread centripetally leaving behind a thinned vascularized cornea, healed cornea consist of descemets membrane covered by conjunctival epithelium & vessels.

58. **Interstitial keratitis** = stromal corneal opacity involving visual Axis, ghost vessels found in stroma, reduced corneal sensitivity.

59. **Neurotrophic Keratopathy** = painless red eye, decreased lacrimation, decreased sensitivity, corneal appearance is dull, staining shows raised , rolled grey edges.

60. **Exposure keratopathy** = punctate epithelial keratopathy usually involve inferior third of cornea, large epithelial defects, irritable red eyes worse in morning.

61. **Keratoconus =** onset at the time of puberty, bilateral, painless progressive decreased vision for near & distance both (due to myopia & astigmatism), photophobia, monocular diplopia, DDO shows oil droplet reflex, Munson's sign (bulging of lower eyelid when patient looks down), retinoscopy shows scissors reflex, slit lamp shows thinning & forward bulging of central cornea, vogt's lines & fleisher's ring are also found.

62. **Filamentary keratitis** = symptoms of corneal involvement & rose Bengal staining shows corneal filaments.

63. **Corneal degenerations (opacifying disorders):**

• **Arcus Senilis** = most coon peripheral corneal opacity due to infiltration of lipids.

• **Lipid keratopathy** = Primary (appear as white stromal deposits consist of fats & phospholipids, nonvascularized), Secondary (more common & vascularized).

• **Band keratopathy** = deposition of calcium salts in bowman's membrane, epithelial basement membrane & anterior stroma.

• **Spheroidal degeneration** = amber colored granules deposits in superficial stroma (climate droplet keratopathy)

• **Salzman nodular degeneration** = secondary to trachoma, grey white nodular opacities deposited in superficial stroma.

64. **Corneal dystrophies (bilateral opacifying disorders):**

• **Anterior dystrophies** = Epithelial basement membrane dystrophy, Reis-buckler's dystrophy, Meesman's dystrophy & recurrent corneal erosion syndrome.

• **Stromal dystrophies** = Granular dystrophy, lattice dystrophy, macular dystrophy.

• **Posterior dystrophies** = Fuch's endothelial dystrophy.

65. **Episcleritis** = predominantly in females, sudden onset, mild to fiery red flush redness of eye, hotness, pricking sensation or discomfort, salmon pink color lesion, straight inflamed vessels radiate posteriorly from limbus. (Most common type : sectorial episcleritis).

66. **Scleritis :**

• **Anterior non necrotizing scleritis** = Diffuse (mild pain, redness, distortion of radial vascular pattern is characteristic, no visual loss) & Nodular (moderate pain, visible red nodule that cannot be moved).

• **Anterior necrotizing scleritis** = bilateral, gradual, severe & persistent pain (interfere with sleep), associated with systemic vascular disease, visual prognosis poor.

• **without inflammation** = yellow necrotic scleral patch in uninflamed sclera, less pain, bilateral, occurs in women with long standing RA, also known as scleromalacia perforans.

• **Posterior scleritis** = posterior to the equator, pain & visual impairment, proptosis & ophthalmoplegia, disc edema & exudative retinal detachment (in 80% cases), ultrasound shows characteristic T- Sign.

67. **Acute iridocyclitis** = sudden deep ocular pain typically worse at night, signs of corneal involvement, circumcorneal congestion, **keratic precipitates are pathognomic of iridocyclitis,** aqueous flare & cells, fibrinous exudate, muddy appearance of iris, constricted pupil & posterior synechiae.

68. **Chronic iridocyclitis** = white eye, flare & cells present, keratic precipitates have large greasy mutton occlusion appearance, iris nodules (koeppe nodules at papillary margin & busacca nodules on iris surface).

69. **Intermediate uveitis** = bilateral, floaters are the main symptom, small KPs, flare & cells, snowballs & snow banking found in vitreous. (Most common subtype : pars planitis)

70. **Posterior uveitis** = painless condition, floaters, metamorphosis, micropsia, macropsia, photopsia, positive scotoma.

71. **Toxoplasmosis:**

• **Congenital toxoplasmosis** = convulsions, intracranial calcification, hydrocephalus, retinochoroiditis.

• **Acquired toxoplasmosis** = floaters, unilateral blurred or hazy vision, mild to moderate anterior uveitis, white eye, vitritis, retinitis.

• **Recurrent toxoplasmosis** = floaters, unilateral blurred or hazy vision, ritinitis, white eye, vitritis shows "head light in the fog" appearance, perivasculitis may also found.

72**. Endophthalmitis** = symptoms of corneal involvement, loss of red reflex, vitreous filled with exudation & pus, it shows like yellowish whitish mass seen through pupil.

73. **Panophthalmitis** = severe ocular pain, headache, cloudy cornea, IOP raised, anterior chamber filled with full of pus, restricted & painful extra ocular movements.

74**. Sympathetic ophthamitis** = occur after penetrating ocular injury, exciting eye become red & irritable, sympathizing eye becomes photophobic & irritable, multifocal choroidal infiltrates develop in mid periphery.

75**. Fuch's uveitis syndrome** = unilateral, affect young adult, vitreous floaters, gradual blurring due to cataract formation, white eye, KPs are small & rounded or satellite & grey white, aqueous flare & cells, diffuse iris atrophy, iris heterochromia.

76**. Acute posterior multiple placoid pigment epitheliopathy** = bilateral, follow a flu like illness, asymmetrical visual loss associated with central & paracentral scotoma, fundoscopy shows multiple large flat yellow white deep placoid lesion at the level of retinal pigment epithelium.

77. **Vitreous liquefaction** = floaters, fibrillar structure lost, pockets of fluid with coarse aggregate material moves freely in vitreous.

78. **Posterior vitreous detachment** = flashes of light & floaters, ring like opacity (Weiss ring) **pathognomic of VD.**

79**. Vitreous Opacities:**

• **Muscae volitantes** = physiological opacities, perceived as black spots like small mosquitoes.

• **Asteroid hyalosis** = small, white rounded bodies due to accumulation of calcium containing lipids, unilateral, occur in old patient, asymptomatic, associated with diabetes & hypercholesterolemia.

• **Synchysis scintillans** = small white angular & refractile bodies, formed of cholesterol, affect the damaged eyes, golden shower appearance, symptomatic but untreatable.

• **Inflammatory opacities** = due to inflammatory exudate.

• **amyloid degeneration** = bilateral systemic disease with deposition of amyloid in vitreous & other parts of body.

80. **Persistent hyperplastic primary vitreous** = microopthalmic eye, lucokoria, long ciliary processes visible in dilated pupil, associated with cataract & glaucoma.

81. **Vitreous hemorrhage** = sudden floaters (when small hemorrhage), sudden vision loss (when massive hemorrhage), black shadow opacities in the red glow in small hemorrhage but no red glow in massive hemorrhage.

82. **Diabetic retinopathy = 6 stages**:

1. **Background DR (Non proliferative)** = microaneurysms are first clinically detectable lesion, flame shaped & blot hemorrhages, hard exudates having yellow waxy appearance, retinal edema having cystoid appearance.
2. **Pre proliferative stage** = sausage like segmentation of veins, narrow arterioles, cottol wool spots, blot hemorrhages & intra retinal microvascular abnormalities (AV shunts run from arterioles to venules).
3. **Proliferative stage** = characterized by neovascularization (hallmark), new vessels at disc & new vessels elsewhere, vitreous hemorrhage, preretinal hemorrhage.
4. **Diabetic maculopathy** = cystoid macular edema, hard exudates, macular hemorrhage, macular ischemia, pre macular membrane formation, macular detachment.
5. **Advanced/complicated stage** = persistent vitreous hemorrhage, retinal detachment due to vitreoretinal traction, opaque membrane in vitreous, rubeosis iridis.
6. **Burnt out stage** = vascular component regressed, fibrous component left behind.

83. **Hypertensive retinopathy = sudden vision loss, classified into grades :**

• **GRADE I** = arteriolar narrowing.

• **GRADE II** = focal arteriolar narrowing, Salus sign.

• **GRADE III** = above changes plus retinal edema, exudate, cotton wool spots, hemorrhages, copper wire appearance of arterioles, bonnet sign, Gunn sign.

• **GRADE IV** = above changes plus disc edema & silver wire appearance of arterioles.

84. **Central Retinal vein occlusion** = sudden unilateral painless vision loss, afferent pupillary defect, absent spontaneous venous pulsation, dilated engorged retinal veins, blot & flame shaped hemorrhages in all quadrants but most numerous in periphery, cottol wool spots, optic disc & macular edema.

85. **Ischemic central retinal vein occlusion** = sudden severe visual loss, counting fingers visual acuity, afferent pupillary defect marked, engorged & tortuous retinal veins, massive retinal hemorrhages giving tomato splashed appearance.

86. **Branch retinal vein occlusion** =edema & hemorrhages limited to retinal area drained by affected vein.

87**. Central retinal artery occlusion** = amaurosis fugax (monocular transient episodes of decreased vision or blindness occur before visual loss), sudden painless loss of vision, total afferent pupillary conduction defect, whitish appearance of retina, extremely thin retinal arteries, cattle tracking sign, cherry red spots due to choroidal vascular shining.

88**. Branch retinal artery occlusion** = retina distal to occlusion become edematous with narrowed arterioles, atrophy leading to permanent sectorial visual field defect.

89. **Retinopathy of prematurity** = 5 Stages :

• **Stage I** = flat white line between normal vascularized & peripheral non vascularized retina (demarcation line).

• **Stage II** = Elevated pink ridge represent mesenchymal shunt joining arterioles with venules.

• **Stage III** = Ridge with extra retinal fibrovascular proliferation, vitreous hemorrhage occurs due to neovessels.

• **Stage IV** = Spontaneous regression or cicatrization, leads to subtotal & finally total retinal detachment.

• **Stage V** = End stage characterized by total retinal detachment due to progressive fibrovascular proliferation, appear as whitish mass leukocoria called retrolental fibroplasia.

90. **Atrophic age related macular degeneration** = gradual impairment of central vision, bilateral but asymmetrical, focal hyperpigmentation, sharply circumscribed circular areas of retinal pigment epithelium atrophy, loss of choriocapillaries, geographical atrophy of RPE, Drusens formation.

91. **Exudative Age related macular degeneration** = sudden central vision loss & metamorphosis, sharply circumscribed dome shaped elevation due to detachment of RPE by fluid at posterior pole, formation of choroidal new vessels,

92**. Rhegmatogenous retinal detachment** = floaters, flashes of light, sudden painless loss of vision, dark curtain like perception, relative afferent pupillary defect, intraocular pressure is 5mmHg lower than normal, Shaffer's sign (tobacco dust like opacities), bullous or corrugated appearance of detached retina.

93**. Tractional retinal detachment** = vitreoretinal band, reduced retinal mobility, highest elevation of retina at the site of traction.

94**. Exudative retinal detachment**= appear as smooth & convex, change in the position of detached area with gravity.

95. **Central serous chorioretinopathy** = affect males, sudden unilateral painless blurred vision associated with positive scotoma, metamorphosis, micropsia, hypermetropia, circular ring reflex.

96. **Macular hole** = 4 stages:

- **Stage 0** = asymptomatic, normal visual acuity, loss of foveal depression, perifoveal vitreoretinal detachment.

- **Stage I (impending macular hole)** = typical central visual loss, metamorphosia, loss of foveal depression with yellow spot or ring at the centre of fovea, OCT reveal pseudocyst or horizontal splitting.
- **Stage II** = less than 400mm, full thickness sensory retinal break, OCT shows sensory defect & attachment of hyaloid to the foveal centre.
- **Stage III** = Greater than 400 mm, full thickness sensory retinal defect with cuff of subretiinal fluid, posterior hyaloid detached from macula but attached to optic disc.
- **Stage IV** = fully developed macular hole with complete posterior vitreous detachment signified by Weiss ring.

97**. Retinitis pigmentosa** = night blindness, small tunnel vision, blood vessels thread like & attenuated due to hyalinization, pigmentation bone corpuscles or bone spicules, optic disc has pale wax appearance, maculopathy.

98. **Retinoblastoma** = leukocoria, convergent or divergent squint, defective vision, secondary glaucoma, psuedo hypopyon, proptosis in advanced stage, chalky white appearance.

99**. Optic neuritis** = unilateral acute or subacute visual loss, pain on extraocular movements, impaired Color vision (mainly red & green colour), RAPD present, tenderness of globe & deep orbital pain or brow pain, uhthoff's sign.

100. **Papilloedema** = headache (occurs early in the morning), aggravated by coughing, sneezing, straining, relieved by projectile vomiting, deterioration of consciousness, recurrent attacks of transient vision loss (blacking out or greying out vision lasting 10-15 secs by sudden change of posture), diplopia.

101**. Preseptal cellulitis** = edematous, tender eyelid, purple red sharply demarcated swelling.

102. **Orbital cellulitis** = rapid onset of orbital swelling, pain associated with malaise & fever, proptosis, periorbital & lid edema, red, warm &

tender skin, restricted & painful extraocular movements, decreased vision, pupillary abnormalities, congestion of retinal vessels & disc edema.

103. **Hypermetropia** = image focused behind the retina, long sightedness, associated with convergent squint, commonly corrected by convex lens.

104. **Myopia** = image focused in front of retina, short sightedness, associated with divergent squint, commonly corrected by concave lens.

105**. Presbyopia** = occurs after 40 years, insufficiency of accommodation leading to impairment of near vision, commonly corrected by convex lens

106. **Anisometropia =** when both eyes have unequal refraction (more than 4 dioptres - not tolerated).

107. **Amblyopia** = reduced visual acuity to two or more than two lines of Snellen's chart, no improvement on pin hole test, crowding phenomenon is present.

108. **Comitant Squint** = gradual, congenital, usually during childhood, deviation remain same in all directions.

109. **Noncomitant squint** = sudden, occur at any age, history of head trauma, difference between primary & secondary deviation is characteristic, diplopia, abnormal head posture, limitation of movements, neurological lesion or systemic disease may be present, deviation is irregular & varies in different directions of gaze.

110. **Third nerve palsy** = severe headache, periocular pain, limitation of adduction, upward & downward movements, ptosis, pupillary dysfunction.

111. **4th nerve palsy** = vertical diplopia in down gaze or at near distance (reading), head tilt typically to opposite side, limitation of right depression on adduction.

112. **6th nerve palsy** = horizontal diplopia worsen on ipsilateral gaze especially at distance, face turned into field of action of paralyzed muscles, marked limitation of right abduction.

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