

**BINDURA UNIVERSITY OF SCIENCE EDUCATION**

**FACULTY OF SCIENCE & ENGINEERING**

**DEPARTMENT OF OPTOMETRY**

**BACHELOR OF SCIENCE HONOURS DEGREE IN OPTOMETRY**

**JUN 2023**

**OPT 212: OCULAR PATHOLOGY II**

**DURATION: 3 HOUR**

**TOTAL MARKS: 100**

**CANDIDATE NUMBER:**

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**INSTRUCTIONS**

This exam contains TWO sections: Section A: 40 Marks; Section B: 60 Marks

Answer Section A on the Question paper and Section B on the answer booklet. Answer all questions.

**SECTION A (40 marks)**

1. Optic neuritis can be associated with:
  - a. Pain with eye movement
  - b. Vision loss
  - c. Colour vision compromise
  - d. Macular oedema
  - e. All of the above
2. Papilledema can be associated with:
  - a. Swelling of the optic nerve head
  - b. Venous dilation
  - c. Absent spontaneous venous pulsation
  - d. Retinal exudates
  - e. All of the above
3. Diabetes mellitus is not typically associated with the following ocular signs:
  - a. Iris neovascularization
  - b. Hard exudates
  - c. Retinal neovascularization
  - d. Strabismus
  - e. B and C

4. In the eye, hypertension is typically associated with
  - a. Central retinal vein occlusion
  - b. Cataracts
  - c. Choroidal naevus
  - d. Retinal neovascularization
  - e. Scleritis
5. The earliest feature of anterior uveitis includes:
  - a. Keratic precipitates
  - b. Hypopyon
  - c. Posterior synechiae
  - d. Aqueous flare
6. Ophthalmic features of AIDS are
  - a. Cotton wool spots
  - b. Retinitis
  - c. Keratitis due to HSV or HZV
  - d. Kaposi sarcoma of the eye lid
  - e. All of the above
7. Multiple sclerosis is commonly associated with
  - a. Conjunctivitis
  - b. Scleritis
  - c. Optic neuritis
  - d. Uveitis
  - e. Keratitis
8. Neovascular glaucoma follows:
  - a. Thrombosis of central retinal vein
  - b. Acute congestive glaucoma
  - c. Staphylococcal infection
  - d. Hypertension
9. Lens induced glaucoma is least likely to occur in:
  - a. Intumescent cataract.
  - b. Anterior lens dislocation
  - c. Posterior subcapsular cataract
  - d. Posterior lens dislocation
10. Topical beta blockers can
  - a. Induce bronchospasm in asthma and COP
  - b. Precipitate heart failure
  - c. Inhibit the increase in heart rate and blood pressure with exertion
  - d. Exacerbate heart block
  - e. All of the above

11. The major concern about a vitreous detachment is that it will lead to:
- Retinal break and detachment
  - Retinal neovascularization
  - Vitreous bleeding
  - Macular degeneration
12. In cataract surgery, the extracted lens is replaced by an implant that is usually placed where?
- Within the iris plane
  - Within the lens capsule
  - Within the anterior chamber of the eye
  - Between the lens capsule and the vitreous
13. An afferent pupil defect of a lesion in the:
- Optic nerve
  - Optic tract
  - Macula
  - Lens
14. Commonest lesion which hinders vision in diabetic retinopathy is:
- Macular oedema
  - Microaneurysm
  - Retinal hemorrhage
  - Retinal detachment
15. Which is FALSE? Congenital cataract:
- Can present unilaterally or bilaterally
  - Can be associated with a systemic condition
  - Can present with leukocoria
  - Can present with strabismus
  - Is different from adult cataract, as congenital cataract is not treated with lensectomy
16. Most common cause of cataract is
- Smoking
  - Heredity
  - Systemic disease such as diabetes
  - Ageing
  - Toxins
17. Which optic nerve finding is most concerning for glaucomatous damage?
- Large disk size
  - Horizontal cupping
  - Vertical cupping
  - Disk tilt.



18. Which of the following is the biggest risk factor for primary open angle glaucoma?
- Asian ancestry
  - Smaller diurnal pressure IOP changes
  - Thin corneas
  - Large optic disks
19. Aqueous fluid is produced in which chamber?
- Anterior chamber
  - Vitreous chamber
  - Posterior chamber
  - Trabecular chamber
20. What is glaucoma?
- Retinal damage from high intraocular pressure
  - Optic nerve death caused by mechanical stretching forces
  - Ischemic nerve damage from decreased blood perfusion gradients
  - None of the above
21. A 32-year-old white man with a history of type-1 diabetes presents to you complaining of decreased vision. He has not seen an eye doctor in years. On exam, you find numerous dot-blot hemorrhages, hard exudates, and areas of abnormal vasculature in the retina. Pan-retinal photocoagulation might be done in this patient to:
- Kill ischemic retina
  - Tamponade retinal tears
  - Ablate peripheral blood vessels
  - Seal off leaking blood vessels
22. Which of the following is a risk factor for retinal detachment?
- Black race
  - Male sex
  - Presbyopia
  - Myopia
23. A 57-year-old man complains of flashing lights and a shade of darkness over his inferior nasal quadrant in one eye. On exam you find the pressure a little lower on the affected eye and a questionable Schaffer's sign. What condition would lead you to immediate treatment/surgery?
- Macula-off rhegmatogenous retinal detachment
  - Epi-retinal membrane involving the macula
  - Dense vitreous hemorrhage in the inferior nasal quadrant
  - Mid-peripheral horseshoe tear with sub-retinal fluid

24. Steroids typically induce what kind of cataract?
- Nuclear sclerotic
  - Posterior polar
  - Posterior subcapsular
  - Cortical
25. A lens coloboma?
- Is usually associated with previous lens trauma
  - Is typically located superiorly
  - Is typically associated with normal zonular attachments
  - Is often associated with cortical lens opacification
26. Optic disc drusen typically demonstrate all of the following features except
- Arcuate visual field defects
  - High reflective signal on b-scan ultrasonography
  - Visual acuity loss
  - Optic disc elevation and blurred margins
27. Risk factor(s) for nuclear opacification of the lens identified by epidemiological studies include?
- Current smoking
  - White race
  - Lower education
  - All of the above
28. Patients with acute posterior multifocal placoid pigment epitheliopathy (APMPPE) may have all of the following clinical features except:
- Unilateral or asymmetric fundus involvement
  - Recurrent or relentless progression of fundus lesions leading to permanent loss of central vision
  - Associated cerebral vasculitis
  - Prompt response to oral steroids
29. In the CNTG, Collaborative Normal-Tension glaucoma treatment study, progression was reduced by nearly threefold by a reduction in IOP of?
- 20%
  - 30%
  - 40%
  - 50%
30. A family history of retinoblastoma is present in what percent of newly diagnosed retinoblastoma patients?
- 1%
  - 6%
  - 18%
  - 40%



31. All of the following are common causes of transient visual loss except?
- a. Non-arteritic ischemic optic neuropathy
  - b. Migraine
  - c. Giant cell arteritis
  - d. Pseudotumor cerebri
32. All of the following are risk factors for cystoid macular edema after cataract surgery except:
- a. Diabetes mellitus
  - b. Flexible open-loop anterior chamber IOL implantation
  - c. Ruptured posterior capsule
  - d. Marked postoperative inflammation
  - e. Vitreous loss
33. The risk of cataract development may be decreased by foods rich in?
- a. Vitamin A
  - b. Vitamin C
  - c. Beta carotene
  - d. Leutin
34. The parents of a 7-month-old child complain of intermittent tearing OD only, beginning 3 months ago. Their pediatrician prescribed lacrimal sac massage but noticed a decreased red reflex OD and large cornea on a follow-up visit. The most likely diagnosis is?
- a. Congenital glaucoma
  - b. Infantile cataract
  - c. Chlamydial conjunctivitis with corneal scarring
  - d. Retinoblastoma
35. The preferred therapy for infantile glaucoma is?
- a. Topical beta blockers
  - b. Topical brimonidine
  - c. Trabeculotomy or goniotomy
  - d. Oral acetazolamide
36. In which of the following conditions bilateral inferior subluxation of lens is seen?
- a. Ocular trauma
  - b. Marfan's syndrome
  - c. Homocystinuria
  - d. Hyperlysinemia

37. A physician diagnosed a new case of Type 2 DM. What is the correct time to refer the patient for ophthalmologic examination?
- a. As early as possible
  - b. After 5 years
  - c. After 10 years
  - d. After 15 years
38. Which anti-glaucoma drug cannot be used topically?
- a. Latanoprost
  - b. Brimonidine
  - c. Acetazolamide
  - d. Dorzolamide
39. The following signs and symptoms are useful for differentiating between papilledema and optic neuritis except:
- a. Central scotoma.
  - b. Decreased visual acuity
  - c. Optic disc swelling
  - d. History of recurrent transient arm weakness
  - e. Pain behind eye
40. Typical peripheral cystoid degeneration of the retina:
- a. Is associated with high myopia
  - b. Produces cystic spaces in the nerve fibre layer
  - c. Increases the risk of retinal detachment
  - d. Has overlying liquefied vitreous
  - e. Gives rise to retinoschisis through coalescence of the cystic spaces

**SECTION B Attempt all questions. (60 marks)**

1. Define sympathetic ophthalmia. (2 marks)
  - i. List the two early symptom and sign of sympathetic ophthalmia (2 marks)
  - ii. Define evisceration and enucleation (4 marks)
  - iii. Outline the pathophysiology of sympathetic ophthalmia (4 marks)
2. Define glaucoma (4 marks)
  - i. List 8 risk factors of primary open angle glaucoma (4 marks)
  - ii. List 4 classification of glaucoma. (4 marks)
3. List the types of uveitis (4 marks)
  - i. Outline the ocular structures involved in the types mentioned above. (8 marks)
4. What is the pathophysiology of retinal detachment? (3 marks)
  - a. List the 5 types of retinal detachment (5 marks)
5. Define shaken baby syndrome. (2 marks)
  - i. List four ocular signs of shaken baby syndrome (4 marks)
6. Define diabetic eye disease. (2 marks)
  - ✓ Outline the pathophysiology of diabetic retinopathy. (8 marks)

**END OF PAPER**