BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE & ENGINEERING

DEPARTMENT OF OPTOMETRY

BACHELOR OF SCIENCE HONOURS DEGREE IN OPTOMETRY

(OPTC 212): OCULAR PATHOLOGY II

DURATION: 3 HOUR

5 JUN 2025

TOTAL MARKS: 100

CANDIDATE NUMBER: | | | | | | | | | |

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. Papilloedema 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:
    a. Retinal break and detachment
    b. Retinal neovascularization
    c. Vitreous bleeding
    d. Macular degeneration

12. In cataract surgery, the extracted lens is replaced by an implant that is usually placed where?
    a. Within the iris plane
    b. Within the lens capsule
    c. Within the anterior chamber of the eye
    d. Between the lens capsule and the vitreous

13. An afferent pupil defect of a lesion in the:
    a. Optic nerve
    b. Optic tract
    c. Macula
    d. Lens

14. Commonest lesion which hinders vision in diabetic retinopathy is:
    a. Macular oedema
    b. Microaneurysm
    c. Retinal hemorrhage
    d. Retinal detachment

15. Which is FALSE? Congenital cataract:
    a. Can present unilaterally or bilaterally
    b. Can be associated with a systemic condition
    c. Can present with leukocoria
    d. Can present with strabismus
    e. Is different from adult cataract, as congenital cataract is not treated with lensectomy

16. Most common cause of cataract is
    a. Smoking
    b. Heredity
    c. Systemic disease such as diabetes
    d. Ageing
    e. Toxins

17. Which optic nerve finding is most concerning for glaucomatous damage?
    a. Large disk size
    b. Horizontal cupping
    c. Vertical cupping
    d. Disk tilt

18. Which of the following is the biggest risk factor for primary open angle glaucoma?
    a. Asian ancestry
    b. Smaller diurnal pressure IOP changes
    c. Thin corneas
    d. Large optic disks

19. Aqueous fluid is produced in which chamber?
    a. Anterior chamber
    b. Vitreous chamber
    c. Posterior chamber
    d. Trabecular chamber

20. What is glaucoma?
    a. Retinal damage from high intraocular pressure
    b. Optic nerve death caused by mechanical stretching forces
    c. Ischemic nerve damage from decreased blood perfusion gradients
    d. 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:
    a. Kill ischemic retina
    b. Tamponade retinal tears
    c. Ablate peripheral blood vessels
    d. Seal off leaking blood vessels

22. Which of the following is a risk factor for retinal detachment?
    a. Black race
    b. Male sex
    c. Presbyopia
    d. 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?
    a. Macula-off rhegmatogenous retinal detachment
    b. Epi-retinal membrane involving the macula
    c. Dense vitreous hemorrhage in the inferior nasal quadrant
    d. Mid-peripheral horseshoe tear with sub-retinal fluid

24. Steroids typically induce what kind of cataract?
    a. Nuclear sclerotic
    b. Posterior polar
    c. Posterior subcapsular
    d. Cortical

25. A lens coloboma?
    a. Is usually associated with previous lens trauma
    b. Is typically located superiorly
    c. Is typically associated with normal zonular attachments
    d. Is often associated with cortical lens opacification

26. Optic disc drusen typically demonstrate all of the following features except
    a. Arcuate visual field defects
    b. High reflective signal on b-scan ultrasonography
    c. Visual acuity loss
    d. Optic disc elevation and blurred margins

27. Risk factor(s) for nuclear opacification of the lens identified by epidemiological studies include?
    a. Current smoking
    b. White race
    c. Lower education
    d. All of the above

28. Patients with acute posterior multifocal placoid pigment epitheliopathy (APMPPE) may have all of the following clinical features except:
    a. Unilateral or asymmetric fundus involvement
    b. Recurrent or relentless progression of fundus lesions leading to permanent loss of central vision
    c. Associated cerebral vasculitis
    d. 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?
    a. 20%
    b. 30%
    c. 40%
    d. 50%

30. A family history of retinoblastoma is present in what percent of newly diagnosed retinoblastoma patients?
    a. 1%
    b. 6%
    c. 18%
    d. 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 lense 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 papilloedema 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 fiber 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 (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