BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT OF OPTOMETRY

BACHELOR OF SCIENCE HONOURS DEGREE IN OPTOMETRY

CANDIDATE NUMBER:

OPTC 404: CLINICAL OPTOMETRY IV

DURATION: 3 HOURS (120 MARKS)

INSTRUCTIONS

Attempt ALL questions.

Answer ALL questions on the booklets provided.

1. Discuss the clinical management of the following ocular conditions.
   (a) Presbyopia [5]
   (b) Allergic rhinitis [5]
   (c) Glaucoma [5]
   (d) Conjunctivitis [5]
   (e) Age-related macular degeneration (AMD) [5]

2. Case 1

TM is a 42-year-old who presents for ocular health exam. She was last seen 3+ years ago and has previous UCVA 20/20 D & N. Minimal prescription was found in 2019. Her systemic history is remarkable for Crohn's disease. She is on HUMIRA to manage it. She had unremarkable exam in 2019 with excellent ocular health results. TM presents with blurred vision and eye ache OD only. Last season she had a shingles outbreak that was linked to double dose of HUMIRA. She is now on STELARA instead (HUMIRA stopped working). She had significant eyelid swelling and radiating pain and rash on right side and was hospitalized for 48 hours because of degree of outbreak and heavy immunosuppression. Due to eyelid swelling, an Ophthalmology consult was ordered by ER physician. Consulting retinal specialist indicated no ocular involvement including retina and optic nerve

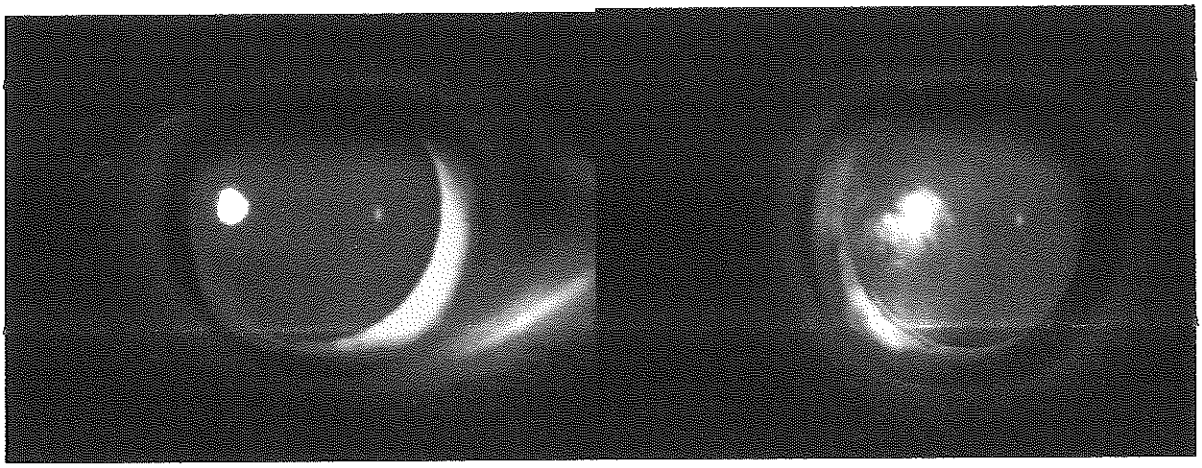
•UCVA is 20/40 OD, 20/20 OS

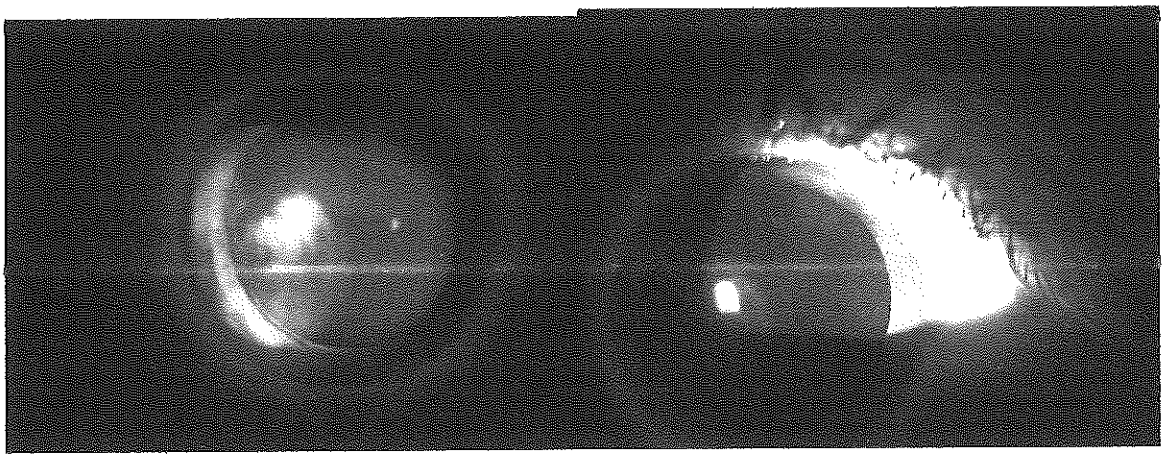
•AR reveals 4.50+4.50 x 025 OD 0.50+0.75 x 010 OS

•Final MR: 1.75+1.25 x 177 OD 20/25 0.75+0.50 x 005 OS

•EOMS, PUPILS and CF are WNL

•Reports took over a MONTH for eyelid swelling to resolve. She was not instructed to follow up with eye doctor at discharge. She just hoped vision would improve with time. Posterior segment reveals no abnormalities. Anterior segment reveals:





Discuss the diagnosis and the management of this patient's eye justifying your drug choices. [10]

3. Write short notes on the drug class, mechanism of action, clinical indication, adverse effects, contraindications/warnings) of the following drugs used in clinical optometry;
   (a) Olopatadine [5]
   (b) Timolol [5]
   (c) Chloramphenicol [5]
   (d) Latanoprost [5]
   (e) Diclofenac [5]

4. **Case 2**

Day 1: Vicky, a 6-year-old girl who lived with her mother and two younger sisters, was brought into A&E by her mother. She weighed 22 kg and had always been a healthy, active child. The whole family had had colds and fevers over the last few weeks, but Vicky was still suffering from flu-like symptoms as well as having some nausea, vomiting and a recurrent stomach ache. Her mother was concerned because her symptoms were not improving and she appeared to have lost weight over the last few weeks. On questioning, it became apparent that Vicky had been drinking large quantities of water and juice over the last couple of months. She had also wet the bed on a number of occasions, which her mother had putdown to her not getting on well at school. Laboratory values for blood taken in A&E were:

- Glucose 22 mmol/L (reference range 3.5–10)
- Bicarbonate 11 mmol/L (22–29)
- Blood pH 6.7 (7.35–7.45)
- Ketones 5.5 mmol/L

Her urine also tested positive for ketones (normally 0). A diagnosis of mild ketosis was made presenting secondary to newly diagnosed type 1 diabetes mellitus.

(a) Describe the presenting symptoms that lead to a diagnosis of type 1 DM. [5]
(b) What are the aims of treatment for Vicky? [10]
(c) What initial treatment would you recommend for Vicky? [5]
(d) What long-term therapy would you recommend and why? [5]

5. Discuss the clinical procedure for managing a patient who presents with an eye problem. [25]

6. Give the clinical indications for the following.
   (a) Dipivefrine [2]
   (b) Epinastine [2]
   (c) Latanoprost [2]
   (d) Tetracycline [2]
   (e) Methylcellulose [2]

END OF PAPER