



The Royal Australian and New Zealand College of Ophthalmologists

A.C.N. 000 644 404

94 – 98 Chalmers Street,
SURRY HILLS NSW 2010 AUSTRALIA
Telephone 61 2 9690 1001 Facsimile 61 2 9690 1321

E-mail: ranzco@ranzco.edu
<http://www.ranzco.edu>

OPHTHALMIC BASIC SCIENCE EXAMINATIONS Clinical Ophthalmic Pharmacology & Emergency Medicine 17 March 2009

Duration of Paper:	1.5 hours	Total Marks: 90
Total No. of questions:	37	

- ◆ Candidates must attempt all questions
- ◆ Write your answers in the answer pad using CLEAR and LEGIBLE writing, use diagrams and point form where appropriate
- ◆ Start a new page for each question, do not write on the reverse of any answer page. Make sure to put your candidate number on each page
- ◆ If you cross out an area of your own writing, it will not be considered by the examiners

Question 1

What are the characteristics of a drug in ointment form that allow it to escape from the ointment into both the corneal epithelium and the tears? (1 mark)

Question 2

Give two examples of drugs that achieve higher aqueous levels when administered as ointment rather than drops. (2 marks)

Question 3

What are the main differences between a suspension and a solution? (2 marks)

Question 4

What measures can an ophthalmologist take to minimise adverse effects from multiple drug therapy? (3 marks)

Question 5

Patients using eye drops often worry that not enough stays in the eye as a lot comes out as tears soon after administration. Why is this? (2 marks)

Question 6

What measures can a patient take to maximise ocular absorption of drops, especially if he or she is using more than one topical medication? (3 marks)

Question 7

List two preservatives frequently implicated in ocular toxicity (1 mark)

Question 8

If your patient complains of severe chest pain and you suspect acute myocardial infarction after brief history and examination, what management would you institute? (5 marks)

Question 9

What is the chemical used as tissue adhesive for corneal perforation? (1 mark)

Question 10

In the treatment of severe bacterial keratitis, what measures can be taken to ensure a therapeutic stromal concentration of antibiotic? (3 marks)

Question 11

What is the action of Vitamin C (ascorbic acid) in the cornea? (1 mark)

Question 12

Which drugs can cause Stevens-Johnson syndrome? (3 marks)

Question 13

What ocular side effect commonly occurs with the use of subconjunctival 5-fluorouracil? (1 mark)

Question 14

For a 70kg man, requiring intravenous mannitol 20%, what volume would you prescribe given the dosage of 1g/kg? (1 mark)

Question 15

What is the mechanism of action of mitomycin-C? (2 marks)

Question 16

Name a class of drugs which should be used with caution in a glaucoma patient using Brimonidine eye drops. (1 mark)

Question 17

What are the contraindications to mannitol therapy? (3 marks)

Question 18

What are the possible side-effects of topical beta blockers? (4 marks)

Question 19

List the ocular side-effects of pilocarpine drops. (4 marks)

Question 20

Why are cycloplegics given in the medical management of uveitis? (2 marks)

Question 21

Which two corticosteroid drugs are used most commonly for periocular injection?
(give the generic name) (2 marks)

Question 22

What are the indications for prescribing oral immunomodulatory agents (non-corticosteroid) in uveitis? (4 marks)

Question 23

List the side-effects of prolonged systemic corticosteroid treatment. (4 marks)

Question 24

a) Name a pharmacological treatment for small esotropia and exotropia in children (1 mark).

b) What is its action (2 marks) and side effects (1 mark)?

(4 marks total)

Question 25

An elderly patient is in your clinic for an intravitreal injection of ranibizumab (Lucentis). What possible drug adverse effects will you warn them of? (2 marks)

Question 26

What is the duration of action of infiltrated 1% lignocaine with and without adrenaline? (1 mark)

Question 27

List 2 manifestations of Lignocaine toxicity. (2 marks)

Question 28

When initiating a general anaesthetic for the repair of a perforated globe, what drug would you not request the anaesthetist to use and why? (3 marks)

Question 29

What factors would you consider when assessing a patient for suitability for cataract surgery under topical anaesthetic? (3 marks)

Question 30

Which drugs can cause cataractous lens changes? (3 marks)

Question 31

What is the action of betadine when it is used to clean adjacent to the operative site prior to cataract surgery? (1 mark)

Question 32

a) How is Lissamine green administered? (1 mark)

b) What is it used for? (2 marks)

(3 marks total)

Question 33

List the cardiovascular side effects of 10% phenylephrine drops and explain the physiological basis for these. (3 marks)

Question 34

What side-effects may occur after intravenous injection of fluorescein? (3 marks)

Question 35

What ocular side effects might a patient complain about who takes Sildenafil (Viagra)? (3 marks)

Question 36

Bisphosphonates, such as aledronate, are commonly used in the elderly to prevent osteoporosis. What ocular side effects might occur from taking this medication? (3 marks)

Question 37

Name the neuro-ophthalmic condition that may occur from high doses of Vitamin A. (1 mark)

END OF PAPER