



The Royal Australian and New Zealand College of Ophthalmologists

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OPHTHALMIC BASIC SCIENCE EXAMINATIONS Clinical Ophthalmic Pharmacology & Emergency Medicine 05 August 2008

Duration of Paper:	1.5hours	Total Marks: 90
Total No. of questions:	38	

- ◆ 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

Name 3 buffering agents contained in intraocular irrigating solutions (3 marks)

Question 2

Why do intraocular irrigating solutions need to contain buffering agents? (1 mark)

Question 3

What factors contribute to the amount of topical medication that can penetrate the cornea? (6 marks)

Question 4

What factors in older patients may affect the metabolism and effects of a drug compared with younger patients? (4 marks)

Question 5

You witness an adult pedestrian suffer a cardiac arrest. What is your protocol for cardiopulmonary resuscitation? (4 marks)

Question 6

What visible side-effect may occur to the cornea when topical ciprofloxacin is used to treat an infected corneal epithelial defect? (1 mark)

Question 7

What is the mechanism of action of chloramphenicol? (2 marks)

Question 8

What is the mechanism of action of ciprofloxacin? (2 marks)

Question 9

Name 2 aminoglycosides that may be used in treatment of corneal infections. (1 mark)

Question 10

List 3 classes of topical ocular medications that may be associated with contact blepharoconjunctivitis and give an example of each. (3 marks)

Question 11

a) Name two hyperosmotic agents used for treating elevated intraocular pressure. _____

(1 mark)

b) What is their mechanism of action?

(2 marks)

Question 12

What are the side effects of topical prostaglandin analogues? (4 marks)

Question 13

What is the mechanism of action of 5-fluorouracil? (2 marks)

Question 14

Which glaucoma drug is the most safe to use in pregnancy? (1 mark)

Question 15

List the mechanism of action of the following ocular hypotensives: _____

a) Latanoprost

b) Timolol

c) Dorzolamide

d) Brimonidine

(4 marks)

Question 16

What are the side effects of ocular administration of corticosteroids? (4 marks)

Question 17

A uveitis patient is on oral methotrexate.

a) What is the usual frequency of dosage? (1 mark)

b) What are the possible side effects? (3 marks)

Question 18

List these topical corticosteroid drugs in order of potency (most to least):
dexamethasone, fluorometholone, prednisolone. (1 mark)

Question 19

What is the mechanism of action of nonsteroidal anti-inflammatory drugs? (2 marks)

Question 20

What are the side effects of topical nonsteroidal anti-inflammatory drugs? (3 marks)

Question 21

Why are tetracyclines contraindicated in children? (1 mark)

Question 22

What is an appropriate regimen for cycloplegic refraction in a 3 month old infant? (1 mark)

Question 23

The immunosuppressant cyclosporine can be used in the treatment of paediatric uveitis.
List side-effects you should mention to the parents of a child prior to commencing therapy. (2 marks)

Question 24

A patient with a focus of candida retinitis requires treatment with antifungal agent.
List agents you would consider using. (2 marks)

Question 25

- a) Which local anaesthetic is used for intracameral anaesthesia? (1 mark)
- b) What specific formulation characteristic of this drug is required and why?(1 mark)

Question 26

- a) Why are topical local anaesthetics not suitable for long term use? (1 mark)
- b) What effects may occur if inadvertent long term use occurs? (1 mark)

Question 27

What is the mechanism of action of lignocaine when it is used as a local anaesthetic? (1 mark)

Question 28

What is the maximum safe dose of 2% lignocaine for local injection in an adult of average weight and why? (2 marks)

Question 29

You wish to perform a local anaesthetic block that has a rapid onset and a long duration of action. Which agent(s) would you choose and why? (2 marks)

Question 30

Define the term viscoelasticity.

(1 mark)

Question 31

Name two contraindications to the use of povidone iodine solution in preparation of the surgical field.

(2 marks)

Question 32

What is the mechanism action of topical atropine and how does this result in pupillary dilatation?

(2 marks)

Question 33

What are the features of extravasation of fluorescein during fluorescein angiography? Briefly describe your management of this complication.

(4 marks)

Question 34

List 4 indications for the use of topical muscarinic antagonists in ophthalmology.

(4 marks)

Question 35

What is the main ocular side effect of topiramate (an anti-epileptic drug)?

(1 mark)

Question 36

What are the ocular side effects of retinoic acid ?

(3 marks)

Question 37

What ocular side effect can be seen from Rifabutin (an anti HIVdrug)?

(1 mark)

Question 38

What is the ocular side effect of concern from ethambutol therapy? Is it related to the dose?

(2 marks)

END OF PAPER