



# The Royal Australian and New Zealand College of Ophthalmologists

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## OPHTHALMIC BASIC SCIENCE EXAMINATIONS Clinical Ophthalmic Pharmacology & Emergency Medicine 18 August 2009

<b>Duration of Paper:</b>	<b>1.5hours</b>	<b>Total Marks: 90</b>
<b>Total No. of questions:</b>	<b>36</b>	

- ◆ 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 advantages of the application of digital pressure to the medial canthus after instillation of eye drops? (2 marks)

### Question 2

What are the advantages of using ocular medications as topical eye drops? (2 marks)

### Question 3

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

### Question 4

What effect do the above factors usually have on the half-life of drugs used in the elderly? (1 mark)

### Question 5

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

**Question 6**

List delivery systems commonly used for the administration of ocular drugs. (3 marks)

**Question 7**

You are the first to arrive on the scene of a patient suffering acute shock following trauma. Outline your management. (4 marks)

**Question 8**

What modes of therapy might you consider for the treatment of a fungal corneal abscess? (2 marks)

**Question 9**

What is the action of Valacyclovir? (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**

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

**Question 12**

What are the side-effects of ocular decongestants? (1 mark)

**Question 13**

What length of time after drop administration do the following drugs take to reach peak effect?

- a) Timolol
  - b) Apraclonidine
  - c) Brinzolamide
  - d) Travaprost
- (2 marks)

**Question 14**

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

**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 topical prostaglandin analogues? (4 marks)

**Question 17**

- a) What is the mechanism of action of mycophenolate mofetil (used to treat uveitis)? (2 marks)
- b) Why is it preferentially used over other similar agents? (1 mark)

**Question 18**

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

**Question 19**

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

**Question 20**

List the side effects of oral cyclosporine. (3 marks)

**Question 21**

What are the 2 categories of pupil dilating agents and give an example of each. (2 marks)

**Question 22**

- a) What are the manifestations of systemic intoxication from atropine drops given to a child for the purposes of cycloplegic refraction? (2 marks)
- b) If these side effects occurred, what advice would you give the parent? (1 mark)

**Question 23**

- a) What is an important side effect of brimonidine drops that precludes its use in children?
- b) What is the mechanism by which this is thought to occur? (2 marks total)

**Question 24**

- a) What antibiotics are used for intravitreal injection in post-operative endophthalmitis?
- b) Against which organisms are these active? (3 marks total)

**Question 25**

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

**Question 26**

What is the duration of action of locally infiltrated bupivacaine with or without adrenaline? (2 marks)

**Question 27**

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? (3 marks)

**Question 28**

List 3 manifestations of Lignocaine toxicity. (3 marks)

**Question 29**

What is the role of viscoelastic materials when used in intraocular surgery? (2 marks)

**Question 30**

Name two contraindications to the use of povidone iodine solution in preparation of the surgical field. (2 marks)

**Question 31**

What is the main route of excretion of intravenous fluorescein? (1 mark)

**Question 32**

What is the duration of action of each of the following drops used to dilate the pupil?

- a) cyclopentolate
- b) homatropine
- c) tropicamide
- d) atropine
- e) phenylephrine

(5 marks)

**Question 33**

List points of advice to a patient prior to injection of fluorescein for angiography. (3 marks)

**Question 34**

What are the ocular side-effects of hydroxychloroquine? (3 marks)

**Question 35**

What are the ocular side effects of retinoic acid? (3 marks)

**Question 36**

- a) What ocular side effect may occur from taking vigabatrin (an anti-epileptic drug)?
- b) Is it reversible? (2 marks total)

**END OF PAPER**