

**BINDURA UNIVERSITY OF SCIENCE EDUCATION**  
**FACULTY OF SCIENCE AND ENGINEERING**  
**DEPARTMENT OF OPTOMETRY**  
**BACHELOR OF SCIENCE HONOURS DEGREE IN OPTOMETRY**

JUN 2025

CANDIDATE NUMBER:

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**OPTC 311: DIAGNOSTIC AND OCULAR THERAPEUTICS**

**DURATION: 3 HOURS**

**(100 MARKS)**

**INSTRUCTIONS**

Attempt ALL questions. Answer Section A on the question paper and Section B in the booklet.

**SECTION A. Attempt ALL Questions in this Section (100 Marks)**

1. In the mechanism of action of sulphonamides folate synthesis is inhibited. Which of the following enzyme is relevant to this process?
  - A. Dihydropteroate synthase
  - B. Dihydropteoate synthase
  - C. Dihydroptroate synthase
  - D. Hydropteroate synthase
2. Antibiotics are said to be chemotherapeutic in their action. This implies?
  - A. They are bacteriostatic
  - B. They chemically active
  - C. They are selective in activity
  - D. They target only cell wall synthesis
3. Sulphonamides can be useful in all the following conditions EXCEPT
  - A. UTI's
  - B. Ear infection
  - C. Bronchitis
  - D. Myiasis

4. Penicillin kills susceptible bacteria by specifically inhibiting the .....that catalyzes the final step in cell wall biosynthesis, the cross-linking of peptidoglycan.
- A. Transpeptidase
  - B. Hydroxylamine
  - C. Carbamylation
  - D. Carboxypeptidase
5. Penicillin is a structural analog of the.....
- A. Stearothermophilus
  - B. acyl-D-alanyl-D-alanine terminus
  - C. [14C] diacetyl-L-lysyl-D-alanyl-D-lactate
  - D. D-alanine carboxypeptidase
6. It is not advisable to take Amoxicillin with oranges. Which one of the following best explains the rationale for this?
- A. It slows absorption
  - B. It allows for an ideal substrate
  - C. It deactivated the drug
  - D. It is a clinical protocol
7. Cephalosporin a derivative of the fungus?
- A. *Cephalosporium acremonium*
  - B. *Streptomyces spp.*
  - C. *Staphylococcus aureus*
  - D. *Cephalosporium Avensis*
8. Which one of the following statements is NOT true about the mechanism of action of tetracyclines' antibacterial activity?
- A. They are protein synthesis inhibitors
  - B. They inhibit the binding of aminoacyl-tRNA to the mRNA-ribosome complex
  - C. They bind to the 30S ribosomal subunit in the mRNA translation complex
  - D. They inhibit matrix metalloproteinases
9. Which one of the following statements is NOT true about tetracyclines?
- A. They are natural and synthetic in nature
  - B. They are bacteriostatic
  - C. It interrupts many essential functions of bacterial
  - D. It is cytotoxic

10. All the following interfere with the optimal absorption of tetracyclines EXCEPT
- A. Dairy products
  - B. Antacids
  - C. Normal saline
  - D. Iron salts
11. Which one of the following cannot be considered as an advantage of the structural resemblance of penicillins with cephalosporins?
- A. Provision of alternative in peculiar clinical context
  - B. Management of possible toxicities
  - C. Avoidance of resistance episodes
  - D. Penicillins are cheaper than Cephalosporins
12. The only oral third-generation Cephalosporin agent is .....
- A. Ceftriaxone
  - B. Cefixime
  - C. Ceftazidime
  - D. Cefepime
13. The most striking feature of 4<sup>th</sup> generation Cephalosporins is.....
- A. Broader spectrum of antibacterial activity against gram positive bacteria
  - B. Broader spectrum of antibacterial activity against gram negative bacteria
  - C. Broader spectrum of antibacterial activity against MSRA
  - D. Broader spectrum of antibacterial activity against both gram positive and negative bacteria
14. Which one of the classes of antibiotics are used in the management of acne?
- A. Quinolones
  - B. Sulphonamides
  - C. Macrolides
  - D. Tetracyclines
15. Which class of antibiotics has no oral formulations?
- A. Aminoglycosides
  - B. Cephalosporins
  - C. Penicillins
  - D. Vancomycin's

16. All the following are reasons why Demeclocycline is contraindicated in pregnancy EXCEPT
- A. Retardation of fetal skeletal development
  - B. increased risk for minor birth defects e.g. inguinal hernia
  - C. Discoloration of permanent teeth
  - D. Discoloration of tooth enamel
17. A 30- years old male patient who is HIV positive, his treatment involves a 3-drug antiviral regimen (zidovudine, Didanosine, & ritonavir) with ketoconazole for oral candidiasis. Preliminary diagnosis is made of acute pancreatitis, if this diagnosis is true, the drug most likely to be responsible is:
- A. Didanosine
  - B. Ketoconazole
  - C. Zidovudine
  - D. Ritonavir
18. A 27-year-old nursing mother is diagnosed as suffering from genital herpes. She has a history of this viral infection previously responded to a drug used topically, which of the following drugs is most likely to be prescribed at this time?
- a. Acyclovir
  - b. Amantadine
  - c. Foscarnet
  - d. Ritonavir
19. What was the first antifungal medication?
- a. Amphotericin B
  - b. Clotrimazole
  - c. Fluconazole
  - d. Nystatin
20. Amphotericin B and Nystatin are both examples of which class of antifungal?
- a. Allylamines
  - b. Anti-metabolites
  - c. Azoles
  - d. Polyenes

21. Which of the following is NOT true regarding ergosterol?
- a. It is a biological precursor to Vitamin D
  - b. It is derived from Squalene
  - c. It is found in most fungal and all animal cells
  - d. It is the target for most antifungal medications
22. Which of the following is NOT a Triazole?
- a. Clotrimazole
  - b. Fluconazole
  - c. Itraconazole
  - d. Voriconazole
23. The various lipid associated version of Amphotericin B...
- a. Can be taken orally instead of intravenously
  - b. Increase efficacy
  - c. Reduce cost
  - d. Reduce side effects
24. Allylamines...
- a. Create porous holes in fungal cell walls
  - b. Inhibit B-1,3-glucan synthase
  - c. Inhibit Lanosterol 14a demethylase
  - d. Inhibit squalene epoxidase
25. Which of the following is NOT true regarding Caspofungin?
- a. It belongs to the Echinocandin class of antifungals
  - b. It inhibits B-1,3-glucan synthase
  - c. It is effective against *Candida* and *Cryptococcus* spp.
  - d. It results in the construction of an abnormal cell wall
26. Which of the following is true regarding Griseofulvin
- a. It exclusively treats dermatophyte infections
  - b. It has a narrow therapeutic window requiring therapeutic drug monitoring
  - c. It is a type of Allylamine
  - d. It is administered parentally

27. Which medication would you administer to treat Pulmonary Aspergillosis in a patient with renal impairment?

- a. Amphotericin B
- b. Clotrimazole
- c. Fluconazole
- d. Voriconazole

28. Terbinafine is an example of which class of antifungal?

- a. Allylamine
- b. Anti-metabolite
- c. Azole
- d. Polyene

29. Which class of drugs increases the concentration of all drugs metabolized by Cy P-450 enzymes?

- a. Allylamines
- b. Anti-metabolites
- c. Azoles
- d. Polyenes

30. All the following drugs are analogues of nucleosides except

- a. Acyclovir
- b. Zidovudine
- c. Saquinavir
- d. Didanosine

31. Which one of the following is a viral DNA synthesis inhibitor?

- a. Interferon
- b. Saquinavir
- c. Amantadine
- d. Acyclovir

32. A 78-year-old woman has been taking an anti-glaucoma eyedrop for the past 20 years. The pressures in both eyes measure 18mmHg. Examination reveals the presence of black deposits in the lower tarsal conjunctiva of both eyes. What medication is she likely to be on?
- a. Brimonidine
  - b. Pilocarpine
  - c. Dipivefrine
  - d. Latanoprost
33. A 54-year-old woman with a past history of ophthalmic shingle develops a right uveitis and raised intraocular pressure measuring 30mmHg. There is also mild corneal oedema. She is on tricyclic antidepressant for post-herpetic neuralgia. Which anti-glaucoma medication is preferable?
- a. Timolol
  - b. Oral acetazolamide
  - c. Dorzolamide
  - d. Pilocarpine
34. A 78-year-old asthmatic man has bilateral mild ptosis and early glaucoma with raised intraocular pressures of RE 25 and LE 28. He was given an anti-glaucoma treatment. On review four weeks later, the pressures in both eyes are controlled and the ptosis improves. Which anti-glaucoma medication might have been given in this patient?
- a. Brimonidine
  - b. Pilocarpine
  - c. Iopidine
  - d. Latanoprost
35. A 29-year-old woman has bilateral pigment dispersion syndrome and raised intraocular pressures measuring RE 39 and LE 38. She is a keen sport woman and trains regularly for long-distance running. Which anti-glaucoma medication is preferable?
- a. Brimonidine
  - b. Dorzolamide
  - c. Iopidine
  - d. Latanoprost

36. What sort of receptor is the nicotinic receptor?
- a. A G-protein coupled receptor
  - b. A kinase linked receptor
  - c. An intracellular receptor
  - d. An ion channel
37. Which of the following is a clinical use for a muscarinic agonist?
- a. Treatment of myasthenia gravis
  - b. 'Switching off' the gastrointestinal tract prior to surgery
  - c. 'Switching on' the urinary tract after surgery
  - d. Increasing heart muscle activity in certain heart defects
38. What sort of receptor is the muscarinic receptor?
- a. A G-protein coupled receptor
  - b. A kinase linked receptor
  - c. An intracellular receptor
  - d. An anti-kinase receptor
39. Which one of the following is an unwanted effect of Zidovudine?
- a. Hallucination, dizziness
  - b. Anemia, neutropenia, nausea, insomnia
  - c. Hypertension, vomiting, thrombocytopenia
  - d. Peripheral neuropathy, headache
40. The drug of choice for the treatment of herpes and cytomegalovirus infection is.....
- a. Saquinavir
  - b. Didanosine
  - c. Acyclovir
  - d. Interferon alpha
41. Which one of the following does NOT act on reverse transcriptase?
- a. Abacavir
  - b. Didanosine
  - c. Ritonavir
  - d. Stavudine



42. All the following are related to the mechanistic anti-glaucoma action of Cannabinoids EXCEPT
- a. Vasodilation of efferent vessels of anterior uvea.
  - b. Modification of surface membrane glycoprotein residues in the ciliary epithelium.
  - c. Increased facility of outflow.
  - d. Decrease in aqueous outflow.
43. Which one of the following Cannabinoid receptors can be found in the ciliary bodies of humans?
- a. CB 1
  - b. CB 2
  - c. M1
  - d. M3
44. Which one of the following is the most important side effect of cannabinoids seriously limits their use in the treatment of glaucoma?
- a. Tachycardia,
  - b. Euphoria
  - c. Hypotension
  - d. Conjunctival hyperemia
45. All the following does not account for the worrying effect of cannabinoids EXCEPT
- a. Progressive atrophic optic neuropathy.
  - b. Reduced perfusion of the optic nerve head
  - c. Excessive perfusion of the optic nerve
  - d. Interaction with glycoproteins
46. All the following are under study as a potential anti-glaucoma as a cellular cytoskeleton modulator EXCEPT
- a. Ethacrynic acid
  - b. Latrunculin B
  - c. Swinholide A
  - d. Memantine

47. The goal of neuroprotective therapy in glaucoma management is to.....
- enhance the vascular supply and decrease pro-apoptotic factors.
  - enhance perfusion and neuroprotection
  - decrease glutamate and glycine biosynthesis
  - improve anti-oxidation and free scavenging activity
48. The only conventional anti-glaucoma agent with neuroprotective tendencies is.....
- Dorzolamide
  - Brimonidine
  - Latanoprost
  - Pilocarpine
49. The only antihistamine with proven IOP lowering effect is....
- Naphazoline
  - Levocabastine
  - Antazoline
  - Olopatadine
50. A 37-year-old man complained of anorexia, nausea, enlargement of his breast and impotence. The man, recently diagnosed with pulmonary coccidioidomycosis, has been receiving an antifungal treatment for two weeks. Which of the following drugs most likely caused these adverse effects?
- Amphotericin
  - Nystatin
  - Ketoconazole
  - Flucytosine
51. A 31-year-old homosexual male with AIDS presents to the emergency room with fever (102.3 F°), headache, confusion, muddled thinking and vomiting. Physical examination reveals nuchal rigidity, diplopia and loss of vision. An agglutination test of the spinal fluid for capsular polysaccharide antigen is positive. Which of the following drugs would be an appropriate treatment for this patient?
- Ampicillin and erythromycin
  - Saquinavir and foscarnet
  - Pyrimethamine and sulfadiazine
  - Amphotericin B and flucytosine

52. Reserpine, a hypotensive agent is associated with all of the following EXCEPT
- A. *Rauwolfia serpentine*
  - B. Vesicular Monoamine Transporter
  - C. Tyrosine hydroxylase
  - D. Exocytosis
53. Chemical sympathectomy is the sole mechanism of action of .....
- A. Cocaine
  - B.  $\alpha$ -CH<sub>3</sub>-tyrosine
  - C.  $\alpha$ -CH<sub>3</sub>-dopa
  - D. 6-OH-dopamine
54. B-blockers may be useful in all the following disorders EXCEPT
- A. Depression
  - B. Anxiety
  - C. Glaucoma
  - D. Migraine headaches
55. Which of the following antibiotics has activity against *Pseudomonas spp.*?
- A. Amoxiclav
  - B. Gentamycin
  - C. Tetracycline
  - D. Erythromycin
56. The following are associated with the mechanism of Ciprofloxacin EXCEPT
- A. inhibition DNA gyrase
  - B. inhibition of type II topoisomerase
  - C. inhibition of topoisomerase V
  - D. inhibition of cell division
57. In a case of myasthenia gravis which one of the following antibiotics will be contraindicated?
- A. Gentamycin
  - B. Cefuroxime
  - C. Enoxacin
  - D. Sulphonamides

58. Which one of the following is an example of Macrolide?

- A. Gentamycin
- B. Amikacin
- C. Neomycin
- D. Dirithromycin

59. Antibiotics as a rule are to be ingested on an empty stomach. Which one of the following is an exception to this rule?

- A. Polymycin B
- B. Erythromycin
- C. Azithromycin
- D. Tobramycin

60. Prior to the administration of antibiotics which one of the following assessments is unnecessary?

- A. Evaluation of drug allergies
- B. Assess for contraindications
- C. Assess patients for compliance
- D. Assess for immune status

61. Which class of antibiotics should be taken with plenty fluid intake as a recommendation?

- A. Sulphonamides
- B. Aminoglycosides
- C. Penicillins
- D. Tetracycline

62. A 28-year-old woman on oral contraception was in your clinic to be treated for a profound infection. Which one of the following antibiotics will not be recommendable?

- A. Gentamycin
- B. Ciprofloxacin
- C. Azithromycin
- D. Sulfamethoxazole

63. Increased contraction of the ciliary muscle coupled of excessive lacrimation could be associated with .....
- A.  $\beta$  receptors
  - B.  $M_2$  receptors
  - C.  $M_3$  receptors
  - D.  $M_4$  receptors
64. Which one of the following statements is INCORRECT with regards to 3<sup>rd</sup> generation  $H_1$  receptor blockers?
- A. They cause the blockage  $H_1$ -histamine receptors
  - B. They cause degranulation of mast cells
  - C. They possess anti-inflammatory activity
  - D. They cause reduction histamine biosynthesis
65. The two main pathways of  $P_{450}$  system metabolism of histamine are.....
- A. Methylation and oxidative deamination
  - B. Reductive deamination and methylation
  - C. Acetylation and glucuronidation
  - D. Sulfonation and deamination
66. Which one of the following histaminic receptors is primarily responsible for CNS activity?
- A.  $H_1$
  - B.  $H_2$
  - C.  $H_3$
  - D.  $H_4$
67. Which one of the following receptors is associated with the releases of nitric oxide and prostaglandins?
- A.  $\alpha_1$
  - B.  $H_1$
  - C.  $B_1$
  - D.  $M_2$
68. All the following are examples of mast cell stabilizing agents EXCEPT
- A. Albuterol
  - B. Nedocromil
  - C. Cromolyn sodium
  - D. Azelastine

69. Which of the following best describes the observed delay in loratadine elimination when co-administered with erythromycin?
- A. Tachyphylaxis
  - B. Sensitivity
  - C. Refractoriness
  - D. Protraction
70. In a typical condition of xerostomia which one of the following medications would you recommend?
- A. Methacholine
  - B. Pilocarpine
  - C. Bethanechol
  - D. Scopolamine
71. The possible complication of hypertensive crisis stimulated by drug -food interaction upon the ingestion of MAO inhibitors could be attributed to the presence of..... in the food.
- A. Amphetamine
  - B. Tyramine
  - C. Muscarine
  - D. Alkaloids
72. All the following are side effects of H<sub>1</sub> receptor antagonist EXCEPT
- A. Tremor
  - B. Insomnia
  - C. Vomiting
  - D. Bradycardia
  - E. Drug-drug interaction
  - F. Drug metabolism
73. The following statements are TRUE about Cetirizine EXCEPT
- A. It is excreted unmetabolized
  - B. It is excreted in the urine
  - C. It is excreted in the feces through the bile
  - D. It induces cytochrome P<sub>450</sub> liver enzymes

74. The following are examples of decongestants EXCEPT
- A. Nedocromil
  - B. Naphazoline
  - C. Tetrahydrozoline
  - D. Phenylephrine
75. The only anti-allergic agent with concomitant mast cell stabilizing effect is .....
- A. Levocabastine
  - B. Olopatadine
  - C. Pheniramine
  - D. Azelastine
76. A 7-year-old girl is brought to the physician by her mother because she has several small hairless patches in her scalp with flaking seborrhea at the lid margins. Upon close physical examination, patches look like black dots in the skin surface. Microscopic examination reveals a dense sheath of spores around the hair. Which of the following drugs given orally would be an appropriate treatment for this patient?
- a. Acyclovir
  - b. Metronidazole
  - c. Griseofulvin
  - d. Vancomycin
77. Recognized clinical indications for the use of terbinafine include which of the following diseases?
- a. Actinomycosis
  - b. Toxoplasmosis
  - c. Onychomycosis
  - d. Histoplasmosis
78. A 32-year-old woman, on an oral contraceptive presents to her optometrist with conjunctival hyperemia and photophobia following a 4 days history of perineal pruritus and a non-malodorous, thick, cheesy vaginal discharge. A wet preparation of conjunctival scrapings shows budding yeast cells and pseudo hyphae. Which of the following drugs, given locally, would be appropriate for this patient?
- a. Metronidazole
  - b. Miconazole
  - c. Zidovudine
  - d. Griseofulvin

79. A 68-year-old man is in the hospital because of a prostatectomy performed 4 days before. He is wearing a urinary catheter and is currently treated with a combination of broad-spectrum antibiotics. The patient has been suffering from chronic renal insufficiency for the past two years. Two recent urinalyses showed many budding yeasts and cultures were positive for *Candida albicans*. As the intern optometrist with the team of Clinicians on ward rounds you were asked your opinion on which of the following under listed drugs would be appropriate for a systemic antifungal treatment of this patient. What will be your best choice?

- a. Amphotericin B
- b. Fluconazole
- c. Piperacillin
- d. Metronidazole

80. A 33-year-old, HIV positive homosexual man living near Mississippi river, was admitted to the hospital with a 3-week history of cough, productive yellow sputum, progressive dyspnea of exertion and 14-pound weight loss. Pertinent lab results on admission were: CD4+ lymphocyte counts 320 cells/mm<sup>3</sup>, lactate dehydrogenase 5000 IU/L (normal < 600). A blood stain showed neutrophils containing small, unencapsulated and encapsulated microorganisms. Fundoscopy showed discrete retinal patches. Which of the following statements correctly pairs the most likely disease of the patient with the appropriate treatment?

- a. Progressive disseminate histoplasmosis - amphotericin B
- b. Progressive disseminate coccidioidomycosis - fluconazole
- c. Pulmonary blastomycosis - fluconazole
- d. Meningeal cryptococcosis - amphotericin B

81. Which of the following local anesthetics is more likely to cause allergic reactions?

- a. Lidocaine
- b. Bupivacaine
- c. Procaine
- d. Ropivacaine

82. Which of the following local anesthetics is called a universal anesthetic?

- a. Procaine
- b. Ropivacaine
- c. Lidocaine
- d. Bupivacaine



83. Which of the following local anesthetics is only used for surface or topical anesthesia?
- a. Cocaine
  - b. Tetracaine
  - c. Procaine
  - d. Bupivacaine
84. Which of the following local anesthetics is a short-acting drug?
- a. Procaine
  - b. Tetracaine
  - c. Bupivacaine
  - d. Ropivacaine
85. The choice of a local anesthetic for specific procedures is usually based on.....
- a. The duration of action
  - b. Water solubility
  - c. Capability of rapid penetration through the skin or mucosa with limited tendency to diffuse away from the site of application
  - d. All of the above
86. The primary mechanism of action of local anesthetics is.....
- a. Activation of ligand-gated potassium channels
  - b. Blockade of voltage-gated sodium channels
  - c. Stimulation of voltage-gated N-type calcium channels
  - d. Blockade the GABA-gated chloride channels
87. Local anesthetics are.....
- a. Weak bases
  - b. Weak acids
  - c. Salts
  - d. Amphoteric acid
88. A good local anesthetic agent shouldn't cause:
- a. Local irritation and tissue damage
  - b. Systemic toxicity
  - c. Fast onset and long duration of action
  - d. Vasodilatation

89. Local anesthetics produce:

- a. Analgesia, amnesia, loss of consciousness
- b. Blocking pain sensation without loss of consciousness
- c. Alleviation of anxiety and pain with an altered level of consciousness
- d. A stupor or somnolent state

90. Which of the following glucocorticoids is a short- to medium-acting drug?

- a. Prednisolone
- b. Dexamethasone
- c. Triamcinolone
- d. Betamethasone

91. Which of the following statements concerning the anti-inflammatory effect of glucocorticoids is TRUE?

- a. Anti-inflammatory effect of glucocorticoids results from inhibition of cyclooxygenase
- b. Anti-inflammatory effect of glucocorticoids results from inhibition of phospholipase A2 and reducing prostaglandin and leukotriene synthesis
- c. Induction of cyclooxygenase II expression which results in reducing amount of an enzyme available to produce prostaglandins
- d. Biosynthesis of cyclooxygenase II expression which results in reducing amount of an enzyme available to produce prostaglandins

92. Which of the following property combinations is peculiar to the majority of NSAIDs?

- a. Antihistaminic, antipyretic, analgesic
- b. Immuno-depressive, anti-inflammatory, analgesic
- c. Antipyretic, analgesic, anti-inflammatory
- d. Anti-inflammatory, immune-depressive, antihistaminic

93. Which of the following NSAIDs is a selective COX-2 inhibitor?

- a. Piroxicam
- b. Indomethacin
- c. Celecoxib
- d. Meloxicam

94. The following statements concerning aspirin are true, EXCEPT:

- a. In contrast to most other NSAIDs, aspirin irreversibly inhibits COX
- b. Aspirin interferes with the chemical mediators of the kallikrein system
- c. Aspirin inhibits phospholipase A2
- d. Aspirin inhibits thromboxane A2 formation

95. The following are adverse effects of fluorescein angiography EXCEPT

- a. dyspnea
- b. hypotension
- c. vomiting
- d. hypertension

96. Indocyanine green angiography is contraindicated in patients allergic to

- a. Fluoresceine
- b. Iodine
- c. trypan blue
- d. gentian violet

97. Antihistamines should be avoided in infants as a means of promoting sleep because epidemiological research has shown this practice is linked to an increased incidence of:

- a. sudden infant death syndrome
- b. pneumonia
- c. type-1 diabetes
- d. asthma

98. Early symptoms of aspirin poisoning are

- a. Lethargy
- b. skin rash
- c. throbbing headache
- d. ringing in the ears and blurred vision

99. The concentration of benzalkonium chloride used as a preservative in eye drops is

- a. 1.0%
- b. 0.5%
- c. 0.25%
- d. 0.1%

100. The antihistamine agent with local anesthetic activity is:

- A. Meclizine
- B. Diphenhydramine
- C. Lidocaine
- D. Cocaine

SECTION B (20 MARKS) Attempt *all* questions in this section

1. Prostaglandin analogue has as its side effect ptosis. How does this happen? {2 marks}
2. What is the vehicle for Timolol maleate? {2 marks}
3. What is the essence of electrolytes in artificial tear formulation? {2 marks}
4. As an officer in the Ghana Armed Forces combat unit, you are given orders to lead your troops into an area where there is a high probability of exposure to the nerve gas Soman. To protect yourself and your troop you order them to take an oral medication approximately 8 hours before departure. What could this medication be? {2 marks}
5. What drug would you suggest for the management of mild to moderate pain, when inflammatory action is not necessary? {2 marks}
6. A 40-year-old male crop duster exposed to high level of organophosphate insecticide.
  - a. State three symptoms he is likely to suffer prior to medical treatment. {3 marks}.
  - b. Mention two drugs which could be useful in reversing the symptoms seen in the crop duster exposed to the organophosphate cholinesterase inhibitor. {4 marks}.
7. A 40 old year patient have a family history of myasthenia gravis develops muscle weakness around the eyes and muscle fatigue that increases upon physical exertion but improves after periods of rest. In addition to blood test for elevated antibodies you administer a drug to help confirm the diagnosis that the symptoms are due to myasthenia gravis. If the diagnosis is correct, it will produce a transient reversal of the patient's symptoms. What drug could this be? {3 marks}

END OF PAPER