

# COMMONWEALTH OF AUSTRALIA

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Family Name	
Given Names	
Student Number	
Teaching Period	Semester 1, 2016

<b>FINAL EXAMINATION</b>	<b>DURATION</b>				
<b>PHA405 – Therapeutics a</b>	<table border="1"> <tr> <td>Reading Time:</td> <td><b>10</b> minutes</td> </tr> <tr> <td>Writing Time:</td> <td><b>180</b> minutes</td> </tr> </table>	Reading Time:	<b>10</b> minutes	Writing Time:	<b>180</b> minutes
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**INSTRUCTIONS TO CANDIDATES**

**Section A: Section A - Answer all questions (1 mark each = 50 marks), time allocated is 60 minutes**

**Section B: Part 2 – 150 marks - Answer all questions Time allocated is 120 minutes**

**EXAM CONDITIONS**

**You may begin writing from the commencement of the examination session.** The reading time indicated above is provided as a guide only.

This is a RESTRICTED OPEN BOOK examination

Any non-programmable calculator is permitted

No handwritten notes are permitted

Any hard copy, unannotated English dictionary is permitted

<b>ADDITIONAL AUTHORISED MATERIALS</b>	<b>EXAMINATION MATERIALS TO BE SUPPLIED</b>
Australian Medicine Handbook, un annotated, can be only flagged or highlighted.	1 x 8 Page Book 1 x 20 Page Book 1 x 5-Multiple Choice Answer Sheet 1 x Scrap Paper

**THIS EXAMINATION IS PRINTED  
DOUBLE-SIDED.**

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**Section A - Answer all questions (1 mark each = 50 marks)**

**Part 2 – 150 marks**

**Answer all questions**

1. A diabetic patient presents at the pharmacy with a lesion, which appears to be a hard plaque with central black area, on the underside of the foot, what you should do? (5 marks)
  
2. In a diabetic patient, why do patients not feel sore feet? (5 marks)
  
3. Hypoglycaemia in diabetic patient receiving antidiabetic treatment may be due to? List the signs and symptoms of hypo- and hyperglycaemia. (10 marks)
  
4. The GP asks for your advice about one of his patients who was diagnosed with type 2 diabetes six months ago. He is 65yo, 85kg. He is currently receiving the following medications:  
Aspirin 300mg/d  
Metformin 500mg/bd  
Ramipril 5mg/d  
Atorvastatin 40mg/d  
Temazepam 10mg/at night  
Paracetamol 1g/prn for osteoarthritis  
  
His most recent laboratory results shows: creatinine 85  $\mu\text{mol/L}$ , K 4.2mmol/L, random BGL 8.5mmol/L, HbA1c 8.8%, BP 125/75 mmHg, TGs 2.8 mmol/L. What are the MOST appropriate medication management recommendations? (10 marks)

5. 68 year old male, has uncontrolled rheumatoid arthritis and history of myocardial infarction, he is taking:
- Sulphasalazine
  - Hydroxychloroquine
  - Paracetamol/codeine 500/30 mg
  - Diclofenac
  - Ramipril
  - Aspirin
  - Atorvastatin
  - Atenolol

What is the BEST medication management plan for his rheumatoid arthritis you will recommend?

(5 marks)

6. John, a 45-year-old man with asthma, arranges to see you for a repeat prescription. He has never smoked, and has had asthma since he was 10 years old. He is currently taking inhaled beclomethasone 250 mcg, 2 puffs twice a day and inhaled salbutamol 100 mcg, as needed. His asthma is not well controlled; he is using his salbutamol almost daily to relieve wheeze and chest tightness. John does not use a peak flow meter. You are confident that he is compliant and takes his inhaled steroids as prescribed.
- A. How would you grade the severity of John's asthma?
  - B. Would you recommend modifying John's therapy at this visit?
  - C. What else could you discuss with the patient and GP?

(15 marks)

7. A 58 year old woman admitted to hospital after a fall, pale with yellow skin tinge, slightly confused, history of CHF, taking frusemide and enalapril and has suspected macrocytic anaemia. What needs to be done?

(5 marks)

8. MN is a 13 year old boy who has been diagnosed as type 1 DM for several years. He is maintained on insulin Mixtard 30/70. Lately, and for several days, he was feeling lethargic, and lost his appetite after the 'flu. He complained of having to go to the bathroom several times at night to pass urine, and this makes him tired in the morning for lack of sleep. MN then progressively developed abdominal pain with nausea and vomiting. His parents called their family GP, who found MN dehydrated, agitated, with low blood pressure, deep sighing respiration and his mouth smells of acetone. Upon questioning, MN's parents remembered that they skipped two doses of insulin, and thought that shouldn't be a problem as MN has otherwise always been taking his insulin. MN was admitted to the emergency department.

His laboratory investigations were:

BGL	35 mmol/L	(fasting: 4.2-6.1 mmol/L)
Potassium	6.1 mmol/L	3.5-5.0 mmol/L
Sodium	148 mmol/L	134-144 mmol/L
Bicarbonate	13 mmol/L	22-32 mmol/L

Arterial blood gases:

PH	7.20	7.37-7.42
PCO <sub>2</sub>	55 mm Hg	35-45 mmHg
PO <sub>2</sub>	63 mm Hg	70-100 mm Hg

- What is happening to MN, and why? Relate the signs, symptoms and laboratory investigation findings to the pathophysiology of the condition.
- Does this problem develop in type 1 DM only?
- What immediate treatment would be appropriate? Explain the reasons and rationale for such treatment?
- How would the success of treatment be monitored?
- Develop a care plan to be discussed with MN's parents for his future management to ensure that this problem does not occur again.

(25 marks)

9. SP is a 17-year-old girl who presents to her provider with the following symptoms: shortness of breath in aerobics class (she attends 3 times a week) and waking from sleep due to coughing and tightness in her chest 1 to 2 times a month. She was diagnosed with asthma 3 years ago but has not had any problems with it until recently and is not on any medication. At the doctor's, her peak flow result is 258 L/min. The predicted value for her peak flow given her height is 293 L/min.

- Based on information above, how would you classify SP's asthma and what do her peak flow results indicate?
- What course of action would you suggest to alleviate her condition?

(10 marks)

10. TC is a 35-year-old Asian man with a 25-year history of asthma who presents to his provider with worsening asthma symptoms. In particular, he is now waking up at least 4 nights a week with shortness of breath, and he has been requiring more asthma medication. He is also experiencing shortness of breath at rest on an almost daily basis. JW has recently married and moved into his wife's apartment. She has 2 cats. JW is currently taking fluticasone MDI 44 mcg/puff, 2 puffs twice daily, for control of his asthma. He has been using his salbutamol MDI nearly 5-6 times daily maybe even more (2-3 puffs).
- A. Discuss the goals of therapy for TC.
  - B. How will you manage his condition?

(10 marks)

11. A mother brings her 10 year old daughter to their GP for evaluation of a cough. The mother says that 'the cough is bad during the nights but there is hardly any phlegm.' This has been happening for the past 2-3 months and she also has episodes of difficulty in breathing that 'get better after some time.' She has the same problem during sport in school and she uses her friend's salbutamol inhaler. She is also prone to cold and flu and had an episode of bronchitis 2 years back. Her father is a smoker and she lives with her parents and elder brother on a farm at outskirts of town. The father had a history of seasonal hay fever as a child. The mother reports that her husband has similar symptoms but has not bothered to see a physician as yet. She revealed that her husband's mother expired of asthma.

- A. Discuss the appropriate course of management for the girl?

(5 marks)

12. For a 61 year old male with primary hypertension but no other concurrent illnesses:

- A. Define primary hypertension.
- B. What would be the best antihypertensive agents as an initial therapy?
- C. If a combination therapy was considered, what would be the most appropriate antihypertensive drug used together?

(15 marks)

13. Regarding Chronic Heart Failure:

- A. Describe the rationale of using beta-blockers for the management of chronic heart failure (CHF)?
- B. Which CHF patients are most suitable for beta-blockers?
- C. Which beta-blockers would you chose and why?
- D. How would you assess the efficacy and side effects of beta-blockers during the course of therapy?

(20 marks)

14. Use a table to compare similarities and differences between ventricular and supra-ventricular tachycardia in terms of clinical manifestations and acute pharmacological treatment.

(5 marks)

15. A 46 year old female has inflamed joints in the hands, knees and shoulders, has severe pain and stiffness. She has an elevated CRP and ESR and is taking methotrexate 20mg weekly for the past 2 years; however her arthritis symptoms are worsening. She takes an additional and frequent NSAIDs and analgesia and tried sulphasalazine and leflunomide in the past, but she could not tolerate them and was ceased due to GIT symptoms. What treatment you will recommend?

(5 marks)

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