



## **REGISTRATION EXAMINATION SAMPLE PAPER<sup>1</sup>**

**Spring 2008 (for examination sittings in 2008)**

**PART II (OPEN BOOK and CALCULATIONS)<sup>2</sup>**

### **Instructions to candidates:**

1. For each question there are five options, **A, B, C, D** and **E**. Choose only one of the options as your answer for each question.
2. **You should answer the questions as though you were a registered pharmacist, not a preregistration trainee.**
3. There are 30 open book questions in this paper and 10 calculation questions i.e. the paper is half the size of the actual registration examination open book/calculations paper.
4. You should score one mark for each correct answer: no marks to be deducted for incorrect answers or omissions.
5. The time allowance for this paper is 75 minutes.
6. The reference sources that may be used in this test are the *British National Formulary* Number 54 (September 2007 edition), the *Drug Tariff/Scottish Drug Tariff* (March 2007 edition), the *Medicines, Ethics and Practice guide* Number 31 (July 2007 edition) and the *RPSGB Professional Standards and Guidance Documents*.
7. The use of calculators is not permitted.

<sup>1</sup>All questions in the sample paper are taken from the last four sittings of the **RPSGB registration examination. (Amendments have been made where necessary to ensure that the questions are still contemporary.)** The sample paper is matched to the actual examination in terms of word count, syllabus coverage, ratio of question types and overall facility (the fraction of candidates getting the questions correct).

<sup>2</sup> If you are using this sample paper as part of a "mock" examination, please note that in the "real" examination candidates undertake the **closed book paper first**.

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**SECTION I**  
**(10 questions)**

**Directions for questions 1 to 10.** Each of the questions or incomplete statements in this section is followed by five suggested answers. Select the best answer in each case.

**Questions 1 to 4** concern Mr K who is 65 years old and has a long history of asthma. He is admitted to hospital with pleuritic chest pain and shortness of breath. He has a cough, a temperature of 39°C and a heart rate of 100 beats per min. He is diagnosed as having a severe community-acquired pneumonia of unknown aetiology. Mr K's current medication is:

- salbutamol inhaler 2 puffs when required
- beclometasone 250 microgram inhaler 2 puffs twice daily

The doctor asks you to advise on the choice of antibiotic(s).

1. Given that there are **no** contraindications, which one of the following would be the most appropriate choice for Mr K according to the BNF?
  - A gentamicin
  - B fusidic acid plus flucloxacillin
  - C amoxicillin
  - D erythromycin plus cefuroxime
  - E teicoplanin
  
2. The doctor also wants to administer oxygen. Which one of the following is the maximum concentration of oxygen that would be appropriate for Mr K?
  - A 60%
  - B 50%
  - C 35%
  - D 28%
  - E 24%

On day 7 Mr K feels much better. He is no longer short of breath and his temperature has gone back to normal. Despite this his heart rate is 120 beats per minute and irregular. An ECG shows that Mr K has atrial fibrillation.

3. The doctor asks you for advice. Which one of the following anti-arrhythmics is a first line treatment for atrial fibrillation?

A lidocaine (lignocaine)

B disopyramide

C digoxin

D mexiletine

E procainamide

4. Given there are **no** contraindications, which one of the following medicines is also indicated for elderly patients with atrial fibrillation?

A eplerenone

B warfarin

C enalapril

D dipyridamole

E spironolactone

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5. Mrs T suffers from depression and has been taking fluoxetine capsules 20 mg daily for the last 6 months. As she is **not** responding to treatment her doctor has decided to change her to phenelzine tablets. How soon after stopping the fluoxetine can Mrs T start taking phenelzine?

A immediately

B 1 week

C 2 weeks

D 5 weeks

E 3 months

6. Mr P, who is 70 years old, has recently developed cholestatic jaundice during his hospital admission. His liver function tests were within normal range when he was admitted to hospital 2 weeks ago and you are asked whether it is likely that Mr P is suffering from an adverse drug reaction. Since admission to hospital Mr P has been prescribed the following medicines:

- aspirin
- dipyridamole
- bisoprolol
- flucloxacillin

Which one of the following is the most appropriate response?

- A** Mr P's cholestatic jaundice is **unlikely** to be due to his medication
- B** the cholestatic jaundice is most likely to be due to the aspirin
- C** the cholestatic jaundice is most likely to be due to the dipyridamole
- D** the cholestatic jaundice is most likely to be due to the bisoprolol
- E** the cholestatic jaundice is most likely to be due to the flucloxacillin
7. A 24-year-old bus driver complains of a rash under a ring on his finger. You conclude after looking at his finger that he has allergic contact dermatitis. Which one of the following is the most appropriate treatment?
- A** calamine lotion
- B** hydrocortisone cream
- C** Piriton tablets
- D** Vallergran tablets
- E** E45 cream

8. You are asked to advise on the most appropriate anti-emetic for Mrs B who is terminally ill and suffering from nausea as the result of raised intracranial pressure. Given that Mrs B is **not** allergic to any medicines and that there are **no** contra-indications, which one of the following anti-emetics is the most appropriate for you to recommend as first-line treatment?
- A levomepromazine
  - B cyclizine
  - C metoclopramide
  - D haloperidol
  - E ondansetron
9. Amy is 3 years old and weighs 16 kg. She has been diagnosed with folate-deficient megaloblastic anaemia. Which one of the following is the appropriate initial daily dose of folic acid for Amy?
- A 500 micrograms
  - B 1 mg
  - C 3 mg
  - D 5 mg
  - E 8 mg
10. Which one of the following is the medicine of choice for the treatment of cluster headaches?
- A nefopam tablets
  - B zolmitriptan nasal spray
  - C ergotamine suppositories
  - D methysergide tablets
  - E sumatriptan injection

**SECTION II**  
**(6 questions)**

**Directions for questions 11 to 16.** For each numbered question select from the list above it the one lettered option which is most closely related to it. Within each group of questions each lettered option may be used once, more than once, or not at all.

**Questions 11 and 12** refer to the following list of parenteral medicines:

- A** prilocaine hydrochloride
- B** lidocaine (lignocaine) hydrochloride
- C** chlorpromazine hydrochloride
- D** buprenorphine
- E** atropine sulphate

Select, from **A** to **E**, which one of the above may be:

- 11.** administered **without** the authority of a doctor for the immediate, necessary treatment of sick or injured persons by a person who holds a certificate of proficiency in ambulance paramedic skills
- 12.** administered **without** the authority of a doctor by a registered midwife in the course of his/her professional practice

**Questions 13 and 14** concern the following number of prescription charges:

- A** 0
- B** 1
- C** 2
- D** 3
- E** 4

In situations where prescription charges apply, select from **A** to **E**, how many charges would be payable on the following NHS prescriptions:

**13.**

Ovysmen tablets 3 x OP Canesten Combi 1 x OP
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**14.**

Tritamyl Gluten Free Flour x 1 kg Tritamyl Gluten Free White Bread Mix x 1 kg
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**Questions 15 and 16** concern the following medicines:

- A** 1 pack of 100 Nu-Seals Aspirin (enteric coated aspirin tablets 300 mg)
- B** 4 packs of 30 Aspro Clear (aspirin effervescent 300 mg tablets)
- C** 2 packs of 32 paracetamol 500 mg tablets (non-effervescent)
- D** 1 bottle of 100 aspirin dispersible tablets 75 mg
- E** 3 packs of 32 Paramol (paracetamol 500 mg / dihydrocodeine 7.46 mg, non-effervescent tablets)

Select, from **A** to **E**, which one of the above:

- 15.** can lawfully be sold from a non-pharmacy retail outlet
- 16.** can only be sold or supplied lawfully from a registered pharmacy in accordance with a prescription

**SECTION III**  
**(8 questions)**

**Directions for questions 17 to 24.** Each of the questions or incomplete statements in this section is followed by three responses. For each question **ONE** or **MORE** of the responses is (are) correct. Decide which of the responses is (are) correct. Then choose:

- A** if **1, 2** and **3** are correct
- B** if **1** and **2** only are correct
- C** if **2** and **3** only are correct
- D** if **1** only is correct
- E** if **3** only is correct

<b>Directions Summarised</b>				
<b>A</b> <b>1, 2, 3</b>	<b>B</b> <b>1, 2</b> only	<b>C</b> <b>2, 3</b> only	<b>D</b> <b>1</b> only	<b>E</b> <b>3</b> only

- 17.** Mr J is a 25-year-old patient who suffers from epilepsy (partial seizures). He regularly takes carbamazepine and sodium valproate, and his doctor has just added vigabatrin. Which of the following statements is/are true?
- 1** the addition of vigabatrin will result in decreased serum levels of both carbamazepine and sodium valproate
  - 2** Mr J should be warned to report any new visual symptoms that develop
  - 3** an appropriate starting dose of vigabatrin for Mr J is 500 mg twice daily
- 18.** Which of the following items, prescribed on an NHS prescription issued by a GP, would lead you to contact the prescriber for an alternative?
- 1** Normax capsules
  - 2** Normacol granules
  - 3** Docusol Adult Oral Solution

Directions Summarised				
<b>A</b> 1, 2, 3	<b>B</b> 1, 2 only	<b>C</b> 2, 3 only	<b>D</b> 1 only	<b>E</b> 3 only

19. Regarding industrial denatured alcohol (IDA), which of the following statements is/are true?
- 1 an authorised pharmacist may legally supply IDA to a medical practitioner against a written order without the medical practitioner being authorised by HM Revenue and Customs
  - 2 IDA consists of 95 parts by volume of spirits and 5 parts by volume of wood naphtha, or a substitute for wood naphtha
  - 3 only licensed, or authorised producers or distributors are permitted to supply IDA in quantities of greater than 20 litres
20. You plan to establish a service to collect prescriptions on behalf of patients from the local surgery. According to the guidance in the Royal Pharmaceutical Society's Professional Standards and Guidance Documents on prescription collection services, which of the following statements is/are true?
- 1 repeat prescriptions must **not** be requested from a surgery before consent has been obtained from the patient or their carer
  - 2 prescriptions must be collected by individuals acting in accordance with directions given by the pharmacist
  - 3 the pharmacy must ensure that they have a procedure for recording the initial request for the service
21. Regarding the use of Salagen tablets for the treatment of xerostomia following irradiation for head and neck cancer, which of the following statements is/are true?
- 1 the recommended starting dose is 5 mg 4 times daily
  - 2 it should be discontinued if there is **no** improvement after 2-3 months
  - 3 it may affect the ability to perform skilled tasks

<b>Directions Summarised</b>				
<b>A</b> <b>1, 2, 3</b>	<b>B</b> <b>1, 2</b> only	<b>C</b> <b>2, 3</b> only	<b>D</b> <b>1</b> only	<b>E</b> <b>3</b> only

- 22.** Which of the following suspected adverse drug reactions should be reported to the Medicines and Healthcare products Regulatory Agency?
- 1** insomnia associated with Singulair in a 7-year-old child
  - 2** a cleft palate in a new-born baby associated with prednisolone administered to the mother during pregnancy
  - 3** dizziness associated with Avandamet in a 55-year-old woman
- 23.** According to the Royal Pharmaceutical Society's Professional Standards and Guidance Documents, a record of the extemporaneous preparation of a medicine must include which of the following?
- 1** the expiry date of the product
  - 2** the source of ingredient(s) used
  - 3** the formula used
- 24.** Which of the following cytotoxic medicines can be administered by the intrathecal route, where necessary?
- 1** vindesine
  - 2** amsacrine
  - 3** methotrexate

**SECTION IV**  
**(6 questions)**

**Directions for questions 25 to 30.** The following questions consist of a statement in the left-hand column followed by a second statement in the right-hand column.

Decide whether the **first** statement is true or false.

Decide whether the **second** statement is true or false.

Then choose:

- A** if both statements are true and the second statement is a **correct explanation** of the first statement
- B** if both statements are true but the second statement is **NOT a correct explanation** of the first statement
- C** if the first statement is true but the second statement is false
- D** if the first statement is false but the second statement is true
- E** if both statements are false

<b>Directions Summarised</b>			
	<b>First Statement</b>	<b>Second Statement</b>	
<b>A</b>	True	True	2nd statement is a <b>correct explanation</b> of the first 2nd statement is <b>NOT a correct explanation</b> of the first
<b>B</b>	True	True	
<b>C</b>	True	False	
<b>D</b>	False	True	
<b>E</b>	False	False	

**Question 25** concerns the following scenario:

A patient has been prescribed 5 mg bumetanide to be given as an intravenous infusion and you are asked to advise on administration.

**FIRST STATEMENT**

Sodium chloride and glucose intravenous infusion is a suitable infusion fluid for bumetanide injection

**SECOND STATEMENT**

Bumetanide injection is compatible with both sodium chloride 0.9% and glucose 5%

Directions Summarised			
	First Statement	Second Statement	
<b>A</b>	True	True	2nd statement is a <b>correct explanation</b> of the first 2nd statement is <b>NOT a correct explanation</b> of the first
<b>B</b>	True	True	
<b>C</b>	True	False	
<b>D</b>	False	True	
<b>E</b>	False	False	

**Question 26** concerns the use of flupentixol tablets for the treatment of depression.

**FIRST STATEMENT**

When given in divided doses the second dose of flupentixol should be given **no** later than 4pm

**SECOND STATEMENT**

Flupentixol can cause extrapyramidal symptoms

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**Question 27** concerns the following scenario:

Mrs H asks for your advice. She has recently been prescribed Neoral oral solution and her doctor advised her to mix the oral solution with apple juice immediately before taking to improve the taste. Mrs H wonders if she could use grapefruit juice instead.

**FIRST STATEMENT**

You should advise Mrs H that it would **not** be acceptable to take her Neoral oral solution in grapefruit juice

**SECOND STATEMENT**

Grapefruit juice reduces the plasma concentration of ciclosporin

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**Question 28** concerns the following scenario:

A woman visits your pharmacy to ask you to recommend a suitable non-prescription medicine for her 10-year-old son who has developed hay fever; his main symptoms are sneezing and a runny nose. The child is otherwise well and does **not** take any other medicines.

**FIRST STATEMENT**

It would be appropriate to recommend a Beconase Allergy (beclometasone) nasal spray

**SECOND STATEMENT**

Corticosteroid nasal sprays are indicated for the treatment of allergic rhinitis

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<b>Directions Summarised</b>			
	<b>First Statement</b>	<b>Second Statement</b>	
<b>A</b>	True	True	2nd statement is a <b>correct explanation</b> of the first 2nd statement is <b>NOT a correct explanation</b> of the first
<b>B</b>	True	True	
<b>C</b>	True	False	
<b>D</b>	False	True	
<b>E</b>	False	False	

**Question 29** concerns an NHS prescription form issued by a supplementary prescriber for co-careldopa m/r tablets 50/200.

**FIRST STATEMENT**

The amount paid to a pharmacy in reimbursement for this prescription will be calculated according to the brand endorsed by the pharmacist after dispensing

**SECOND STATEMENT**

Where a product does **not** appear in the Drug Tariff Part VIII (Part 7 Scotland), reimbursement is based on which brand is supplied

**Question 30** concerns the prophylaxis of malaria in individuals with severe splenic dysfunction.

**FIRST STATEMENT**

These individuals should be advised to take rigorous precautions against contracting malaria

**SECOND STATEMENT**

Patients with severe splenic dysfunction are at particular risk of severe malaria

**DESIGNATED CALCULATION QUESTIONS START HERE**

**Some of these questions will require use of the BNF, others will not.**

**Directions for questions 31(Calc) to 37(Calc).** Each of the questions or incomplete statements in this section is followed by five suggested answers. Select the best answer in each case.

**Question 31(Calc)** concerns Benylin Dry Coughs (Original) which contains the following:

Diphenhydramine hydrochloride	14 mg in 5 mL
L-menthol	2 mg in 5 mL
Dextromethorphan hydrobromide	6.5 mg in 5 mL

What weight of diphenhydramine hydrochloride is required to prepare 150 litres of Benylin Dry Coughs (Original)?

- A** 42 g
- B** 195 g
- C** 420 g
- D** 1.95 kg
- E** 4.2 kg

You may use this space for your rough working.

**32(Calc).** How many grams of potassium chloride are needed to prepare 500 mL of a solution containing 6 mmol of potassium ions per 5 mL spoonful?

[atomic weight of potassium = 39; atomic weight of chlorine = 35.5]

- A** 10 g
- B** 15 g
- C** 30.6 g
- D** 44.7 g
- E** 89.4 g

You may use this space for your rough working.

**33(Calc).** If a woman weighing 55 kg is given dobutamine by intravenous infusion at a rate of 4.5 micrograms/kg/minute, how much dobutamine will have been administered after 1 hour?

**A** 1.485 mg

**B** 7.425 mg

**C** 14.85 mg

**D** 74.25 mg

**E** 148.5 mg

You may use this space for your rough working.

**34(Calc).** Mrs W is admitted to hospital after suffering from a stroke. She regularly takes digoxin tablets 125 micrograms daily but as she cannot swallow tablets her doctor wants to change her to an equivalent dose of digoxin elixir. Which one of the following will provide the closest equivalent dose of digoxin for Mrs W?

[bioavailability of digoxin tablets = 0.7; bioavailability of digoxin elixir = 0.8]

- A** digoxin elixir 70 micrograms daily
- B** digoxin elixir 87.5 micrograms daily
- C** digoxin elixir 110 micrograms daily
- D** digoxin elixir 140 micrograms daily
- E** digoxin elixir 180 micrograms daily

You may use this space for your rough working.

**35(Calc).** Which one of the following is the correct weight of potassium permanganate required to make 400 mL of a 1 in 8000 solution?

- A** 0.5 mg
- B** 2 mg
- C** 5 mg
- D** 20 mg
- E** 50 mg

You may use this space for your rough working.

**36(Calc).** A patient with atrial fibrillation is started on amiodarone. The medical practitioner prescribes the usual stabilising regime, followed by the usual maintenance dose.

Given that other medication taken by the patient does **not** interact with amiodarone, how many amiodarone 200 mg tablets would you need to supply for the first 28 days of treatment?

- A** 28
- B** 49
- C** 56
- D** 63
- E** 84

You may use this space for your rough working.

- 37(Calc).** Mrs S wishes to lose weight. She weighs 88 kg and is 1.65 m tall. Given that an ideal BMI is 20-25 kg/m<sup>2</sup>, what target weight range would be appropriate for her?

$$\text{Body mass index (BMI)} = \frac{\text{weight (kg)}}{\text{height (in metres)}^2}$$

- A** 40 - 49 kg
- B** 45 - 58 kg
- C** 55 - 68 kg
- D** 65 - 78 kg
- E** 72 - 85 kg

You may use this space for your rough working.

**Directions for questions 38(Calc) and 39(Calc).** For each numbered question select from the list above the one lettered option which is most closely related to it. Within the group of questions each lettered option may be used once, more than once, or not at all.

**Questions 38(Calc) and 39(Calc)** concern the following quantities:

- A** 0.2 micrograms
- B** 0.02 mg
- C** 0.2 mg
- D** 20 mg
- E** 200 mg

Select, from **A** to **E**, which one of the above:

**38(Calc).** is the most appropriate initial daily dose of alfacalcidol for a 5-week-old child who weighs 4 kg to treat persistent hypocalcaemia

**39(Calc).** is the weight of remifentanyl that will be given to a 3-year-old child weighing 16 kg over 25 minutes when given at a rate of 0.05 micrograms/kg/minute

You may use this space for your rough working.

**Directions for question 40(Calc).** The question in this section is followed by three responses. **ONE** or **MORE** of the responses is (are) correct. Decide which of the responses is (are) correct. Then choose:

- A** if 1, 2 and 3 are correct
- B** if 1 and 2 only are correct
- C** if 2 and 3 only are correct
- D** if 1 only is correct
- E** if 3 only is correct

<b>Directions Summarised</b>				
<b>A</b> 1, 2, 3	<b>B</b> 1, 2 only	<b>C</b> 2, 3 only	<b>D</b> 1 only	<b>E</b> 3 only

**40(Calc).** Which of the following contain the same weight of ferrous iron (elemental iron) as a tablet containing 200 mg of dried ferrous sulphate?

- 1** 9.5 mL Fersamal syrup
- 2** 7.5 mL Sytron elixir
- 3** 3.25 mL Niferex elixir

You may use this space for your rough working.

**END OF QUESTIONS**  
**Now go back and check your work**