

REGISTRATION EXAMINATION SAMPLE PAPER¹

Spring 2011 (for examination sittings in 2011)

PART II (OPEN BOOK and CALCULATIONS)²

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 pre-registration trainee.**
3. Unless otherwise stated you should answer all questions as though a pandemic situation has **not** arisen and is **not** anticipated.
4. 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.
5. You should score one mark for each correct answer: no marks to be deducted for incorrect answers or omissions.
6. The time allowance for this paper is 75 minutes.
7. The reference sources that may be used in this test are *British National Formulary* Number 60 (September 2010 edition) *Drug Tariff*³ England & Wales (April 2010 Edition) OR Scotland (April 2010 edition) and *Medicines, Ethics and Practice guide* Number 34 (July 2010 edition).
8. The use of calculators is not permitted.

¹All questions in the sample paper have appeared in examination papers over the last few years (**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).

²If 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**.

³The actual edition of the *Drug Tariff* (England & Wales OR Scotland) required for the 2011 Registration Examination sittings will be the April 2011 Edition.

All rights reserved. Apart from any fair dealing for the purpose of research or private study, as permitted by the Copyright, Designs and Patents Act 1988, this Spring sample examination paper may only be reproduced, stored or transmitted, in any form or means, with the prior permission in writing of the General Pharmaceutical Council (GPhC). Applications should be made in writing, to the Preregistration Division, GPhC, 129 Lambeth High St, London SE1 7BT. Copyright © GPhC 2011.

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 39⁰C and a heart rate of 100 beats per min. He is diagnosed as having a high-severity community-acquired pneumonia of unknown aetiology. Mr K has no known drug allergies and his 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** clarithromycin plus cefuroxime
- E** teicoplanin

2. The doctor also wants to administer oxygen. Which one of the following percentages would fall within the appropriate target arterial oxygen saturation for Mr K?

- A** 95%
- B** 89%
- C** 60%
- D** 49%
- E** 28%

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 wants to start Mr K on digoxin and asks you to recommend an appropriate oral loading dose of digoxin for rapid digitalisation. Which one of the following is appropriate?
- A 125 – 250 micrograms daily for 2 days
 - B 250 – 500 micrograms daily for 2 days
 - C 0.75 – 1.5mg over 24 hours in divided doses
 - D 0.5 – 0.75mg over 24 hours in divided doses
 - E 62.5 – 125 micrograms once daily
4. Given there are **no** contraindications, which one of the following medicines should also be considered for elderly patients with atrial fibrillation?
- A eplerenone
 - B warfarin
 - C enalapril
 - D dipyridamole
 - E spironolactone
-

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 this 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. Whilst you are working in a community pharmacy a 24-year-old bus driver comes in complaining 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 Phenergan 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 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

14.

Tritamyl Gluten Free Flour x 1 kg Tritamyl Gluten Free White Bread Mix x 1 kg
--

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 lawfully be sold or supplied 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

Directions Summarised				
A 1, 2, 3	B 1, 2 only	C 2, 3 only	D 1 only	E 3 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				
A 1, 2, 3	B 1, 2 only	C 2, 3 only	D 1 only	E 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 alcohol 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.** A record must be made in the Controlled Drugs register when destroying out-of-date stock of:
- 1** Temgesic 200 microgram tablets
 - 2** codeine phosphate 60 mg tablets
 - 3** MST Continus 10 mg tablets
- 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

Directions Summarised				
A 1, 2, 3	B 1, 2 only	C 2, 3 only	D 1 only	E 3 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 Competact in a 55-year-old woman
- 23.** In relation to patient consent, which of the following statements is/are true?
- 1** Explicit consent should be obtained before dispensing a patient's prescription
 - 2** Parental consent to treatment must be obtained for all children under the age of 16 years
 - 3** Written consent should be obtained before performing a diagnostic test
- 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 first 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

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

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

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 beclometasone nasal spray

SECOND STATEMENT

Corticosteroid nasal sprays are indicated for the treatment of allergic rhinitis

Directions Summarised			
	First Statement	Second Statement	
A	True	True	2nd statement is a correct explanation of the first 2nd statement is NOT a correct explanation of the first
B	True	True	
C	True	False	
D	False	True	
E	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 shall be made against the brand as claimed by endorsement

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/m², 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 remifentanil 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

Directions Summarised				
A 1, 2, 3	B 1, 2 only	C 2, 3 only	D 1 only	E 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