



REGISTRATION EXAMINATION SAMPLE PAPER¹

Autumn 2009 (for examination sittings in 2010)

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 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 58 (September 2009 edition), the *Drug Tariff* England & Wales (April 2009) OR Scotland (April 2009), the *Medicines, Ethics and Practice guide* Number 33 (July 2009 edition).
7. The use of calculators is not permitted.

¹All questions in the sample paper are taken from previous 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).

² 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.

1. Miss B is 23 years old and is **not** exempt from paying prescription charges. She presents an NHS prescription for the following items:

Cilest tablets, 3 x 21
Ponstan Forte tablets 500 mg x 28
Cyklokapron tablets 500 mg x 60

In situations where prescription charges apply, how many charges would Miss B be required to pay?

- A 1 charge
 - B 2 charges
 - C 3 charges
 - D 4 charges
 - E 5 charges
2. While visiting a ward at your hospital you notice that one of the patients has been prescribed Calcium Resonium powder. The patient is also taking a number of other regular medicines. Which one of these medicines should be stopped?
- A amoxicillin capsules
 - B aspirin tablets
 - C paracetamol tablets
 - D diazepam tablets
 - E spironolactone tablets

3. Regarding the treatment of addiction, which one of the following medicines may only be prescribed by a specially authorised doctor who is licensed to do so by the Secretary of State for the Home Office?
- A dipipanone
 - B methadone
 - C morphine
 - D codeine
 - E dextromoramide
4. Mrs D has been admitted to hospital suffering from acute porphyria. Which one of the following analgesics must **not** be prescribed for her?
- A aspirin
 - B naproxen
 - C pentazocine
 - D codeine
 - E paracetamol
5. A patient who presents with stable angina may **not** legally be sold which one of the following without a prescription?
- A glyceryl trinitrate 600 microgram sublingual tablets
 - B Deponit 5 patches
 - C Nitrolingual Pumpspray
 - D Monomil XL 60 tablets
 - E Ismo 20 tablets

6. Which one of the following medicines must be avoided in Mrs J, who has an estimated glomerular filtration rate of 40 mL/minute/1.73 m²?
- A allopurinol
 - B pseudoephedrine
 - C metformin
 - D co-trimoxazole
 - E pregabalin
7. A woman asks you to recommend a treatment for her 8-year-old son. She has noticed that he has been scratching his bottom and she has also seen some cream-coloured thread-like objects in his faeces. On questioning she tells you that her son's perianal skin is **not** broken and that there are **no** signs of weeping. You also find out that he suffers from epilepsy and takes carbamazepine but is otherwise well. Which one of the following non-prescription products is it most appropriate for you to recommend?
- A Ovex (mebendazole) tablet 100 mg
 - B Pripsen oral powder
 - C Canesten Oral Capsule (fluconazole) 150 mg
 - D Anusol Plus HC ointment
 - E Eumovate cream 0.05%
8. Mrs T has recently been prescribed hormone replacement therapy (HRT) and as she is concerned about the side-effects she asks you for more information. During your discussion, you mention that there are some instances when HRT should be stopped immediately. Which one of the following is a reason to stop HRT immediately?
- A nausea
 - B exfoliative dermatitis
 - C alopecia
 - D cough with blood stained sputum
 - E severe unexplained sore throat, fever or malaise

9. Which one of the following is classified as a drug for which discount is not deducted (“Zero Discount”) for the purposes of payment under the National Health Service?
- A Cuplex Gel
 - B Kay-Cee-L Syrup
 - C Xalacom Eye Drops
 - D Nitrofurantoin Suspension 25 mg/5mL
 - E Zomig tablets
10. Mr B has recently started to take bisoprolol tablets for the treatment of hypertension but is experiencing nightmares which are disturbing his sleep. His GP asks if you can recommend an alternative beta-adrenoceptor blocking drug which is less likely to cause this effect. Which one of the following is the most appropriate for you to recommend?
- A propranolol
 - B atenolol
 - C oxprenolol
 - D timolol
 - E labetalol

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 to 13 concern the following recommendations for malaria prophylaxis:

- A** no prophylaxis required
- B** 8 chloroquine phosphate 250 mg and 56 proguanil hydrochloride 100 mg tablets
- C** 16 chloroquine phosphate 250 mg tablets and 112 proguanil hydrochloride 100 mg tablets
- D** 17 mefloquine 250 mg tablets
- E** 19 mefloquine 250 mg tablets

Select, from **A** to **E**, which one of the above is the most appropriate option to recommend for the following healthy individuals who have **not** taken malaria prophylaxis before and are planning to travel in about 4 weeks time:

- 11.** a 6-year-old child of average weight visiting Pakistan (lowland areas) for 3 weeks
- 12.** a 13-year-old child of average weight visiting Algeria for 2 weeks
- 13.** a 27-year-old man visiting Ghana for 12 weeks

Questions 14 to 16 concern the following medicines:

- A** buspirone hydrochloride 5 mg tablets
- B** buprenorphine 400 microgram tablets
- C** phenobarbital 60 mg tablets
- D** temazepam 10 mg tablets
- E** tramadol hydrochloride 50 mg capsules

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

- 14.** is a Controlled Drug that must legally be kept in the Controlled Drugs cabinet, and for which prescriptions must state the total quantity prescribed in words and figures
- 15.** is a Controlled Drug that must legally be kept in the Controlled Drugs cabinet, but for which prescriptions do **not** need to state the total quantity prescribed in words and figures
- 16.** is a Controlled Drug that does **not** have to be kept in the Controlled Drugs cabinet, but for which prescriptions must state the total quantity prescribed in words and figures

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.** According to the Royal Pharmaceutical Society's Professional Standards and Guidance Documents on internet pharmacy services, which of the following statements is/are true?
- 1** pharmacy websites must clearly display the name of the owner of the business
 - 2** when supplying non-prescription medicines the suitability of the product for the intended user must be assessed
 - 3** records must be kept to identify the pharmacist who has assumed professional responsibility for supply of a medicine following an e-mail request to purchase
- 18.** Regarding the use of corticosteroids during pregnancy, which of the following readily cross(es) the placenta unchanged?
- 1** prednisolone
 - 2** betamethasone
 - 3** dexamethasone

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

19. A local GP telephones your pharmacy for advice. A patient with coeliac disease has requested a prescription for 3 gluten-free products, but the GP is unsure if he is permitted to prescribe them on an NHS prescription. Which of the following foods has/have been approved by the Advisory Committee on Borderline Substances for prescribing on an NHS prescription written by a GP for a patient with coeliac disease?

- 1 Tritamyl gluten-free flour
- 2 Bi-Aglut spaghetti
- 3 Schar gluten-free cake mix

20. Mrs B has developed indigestion and her doctor asks you to recommend an antacid for her. Her serum electrolytes are as follows:

potassium	4.5 mmol/litre
sodium	147 mmol/litre
chloride	103 mmol/litre
calcium	2.5 mmol/litre

Given that there are **no** other contra-indications, which of the following antacid preparations is/are suitable for Mrs B?

- 1 Magnesium Trisilicate Mixture, BP
- 2 Peptac suspension
- 3 Asilone suspension

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

- 21.** According to the advice in the RPSGB's Professional Standards and Guidance Documents, standard operating procedures (SOPs) for handling confidential patient information must cover which of the following?
- 1 how information will be stored
 - 2 the disclosure of information
 - 3 maintenance of appropriate records of requests for disclosure
- 22.** Specific counselling regarding blood dyscrasia symptoms is advised for which of the following medicines?
- 1 penicillamine
 - 2 phenytoin
 - 3 bezafibrate
- 23.** Mrs F has hypothyroidism and regularly has her thyroid function checked. Which of the following medicines may affect her thyroid function?
- 1 aminophylline
 - 2 lithium
 - 3 amiodarone

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

24. Mrs L is admitted to hospital suffering from invasive salmonellosis. Your hospital's antibiotic policy states that ciprofloxacin is the antibiotic of choice for this condition but as Mrs L has epilepsy you are asked to recommend an alternative antibiotic. Which of the following would it be appropriate for you to consider?

- 1** cefotaxime
- 2** erythromycin
- 3** vancomycin

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	

Questions 25 to 27 concern the following scenario:

Mrs G takes warfarin 3 mg daily for treatment of venous thrombosis. Her international normalised ratio (INR) is checked every 6 weeks, and during the previous 4 months has been between 2.4 and 2.6. At her latest clinic appointment her INR is found to be 3.1. When questioned Mrs G tells you that she has recently started to take simvastatin and occasional paracetamol.

25.

FIRST STATEMENT

Mrs G's warfarin dose should be increased

SECOND STATEMENT

The target INR given in the BNF for the treatment of deep-vein thrombosis is 2.5

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	

26.

FIRST STATEMENT

The recent changes in Mrs G's medication could have caused the increase in her INR

SECOND STATEMENT

The anticoagulant effect of warfarin is enhanced by the occasional use of paracetamol

27.

FIRST STATEMENT

An increase in INR could have been caused by a change in diet

SECOND STATEMENT

A significant reduction in vegetable intake can enhance the anticoagulant effect of warfarin

Question 28 concerns the following extract from a prescription:

Hypromellose eye drops
Instil one drop into both eyes as required

FIRST STATEMENT

You should dispense hypromellose 0.3% eye drops

SECOND STATEMENT

The Royal Pharmaceutical Society of Great Britain recommends that when the strength of hypromellose eye drops is **not** stated on a prescription you should supply the lowest strength available

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 the following scenario:

Mrs J is 48 years old and has been admitted to hospital after taking an overdose of aspirin tablets. On admission her plasma-salicylate concentration is found to be 200 mg/litre.

FIRST STATEMENT

Mrs J should be given intravenous sodium bicarbonate 1.26%

SECOND STATEMENT

Sodium bicarbonate prevents cardiac arrhythmias associated with severe salicylate poisoning

Question 30 concerns the following scenario:

While you are working as a locum pharmacist in a community pharmacy a woman asks you to recommend a homoeopathic remedy that will help to 'calm her down' when she takes her driving test. The pharmacy stocks a wide range of homoeopathic medicines, but you have **not** received any training on the use of these products.

FIRST STATEMENT

According to the RPSGB's Professional Standards and Guidance Documents on complementary medicines it is **not** appropriate for you to recommend a homoeopathic medicine for this woman

SECOND STATEMENT

The RPSGB's Professional Standards and Guidance Documents on complementary medicines advises that pharmacists must ensure that they are competent in any area in which they offer advice on treatment or medicines.

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.

31(Calc). What weight of fludroxycortide is present in 20 g of Haelan cream (fludroxycortide cream 0.0125%)?

- A** 0.025 mg
- B** 0.125 mg
- C** 0.25 mg
- D** 1.25 mg
- E** 2.5 mg

You may use this space for your rough working.

32(Calc). Mrs G has haemorrhoids and her doctor has decided to use a rectal sclerosant. He has prescribed 3 mL Oily Phenol Injection, BP, to be injected into the base of each pile. Given that Mrs G requires 3 injections, what weight of phenol will she receive?

- A** 150 mg
- B** 450 mg
- C** 1.5 g
- D** 2.5 g
- E** 4.5 g

You may use this space for your rough working.

33(Calc). FluoriGard Daily dental rinse contains 0.05% sodium fluoride. How many milligrams of fluoride ions are contained in 10 mL of FluoriGard Daily dental rinse?

[Sodium fluoride 2.2 mg = 1 mg fluoride ion]

- A** 2.27 mg
- B** 5 mg
- C** 11 mg
- D** 22.7 mg
- E** 50 mg

You may use this space for your rough working.

- 34(Calc).** You are asked to prepare 14 x 6 mg propranolol powders. You have all the equipment you need, including a balance which weighs accurately between 50 mg and 1000 mg. You decide that the final weight of each powder should be 250 mg, the diluent should be lactose, and to calculate for 1 powder in excess. You therefore:
- A** weigh out 84 mg of propranolol and dilute this by serial dilution with a total of 3.42 g lactose and weigh out individual powders
 - B** weigh out 84 mg of propranolol and dilute this by serial dilution with a total of 3.66 g lactose and weigh out individual powders
 - C** weigh out 84 mg of propranolol and dilute this by serial dilution with a total of 3.75 g lactose and weigh out individual powders
 - D** weigh out 90 mg propranolol and dilute this by serial dilution with a total of 3.36 g lactose and weigh out individual powders
 - E** weigh out 90 mg of propranolol, dilute this by serial dilution with a total of 3.66 g lactose and weigh out individual powders

You may use this space for your rough working.

35(Calc) Mr B, who is 80 years old, has partial seizures. His doctor has decided to prescribe levetiracetam for him and asks you to advise on a suitable dose. On checking Mr B's medical notes you see that his serum creatinine is 300 micromol/litre, and his weight is 60 kg.

$$\text{Creatinine Clearance (mL/minute)} = \frac{1.23 \times (140 - \text{age}) \times \text{weight (kg)}}{\text{serum creatinine (micromol/litre)}}$$

Given Mr B's renal function, which one of the following is the maximum daily dose of levetiracetam that he should be given?

- A** 3 g
- B** 2 g
- C** 1.5 g
- D** 1 g
- E** 0.5 g

You may use this space for your rough working.

36(Calc). The recommended dose of gentamicin for children is 6 mg/kg/day in 3 divided doses. What volume of gentamicin 80 mg in 2 mL injection should be given every 8 hours for a 22 kg child?

- A** 0.37 mL
- B** 0.74 mL
- C** 1.1 mL
- D** 3.3 mL
- E** 3.6 mL

You may use this space for your rough working.

37(Calc). Mr N is prescribed an oxygen cylinder (1360 litres) and giving set, with instructions to use it at a flow rate of 2 litres/minute. If used continuously at this prescribed flow rate, the cylinder should provide treatment for a total of:

- A** 68 minutes
- B** 2 hours 16 minutes
- C** 5 hours 40 minutes
- D** 11 hours 20 minutes
- E** 22 hours 40 minutes

You may use this space for your rough working.

Directions for questions 38(Calc) and 39(Calc). For each numbered question select the one lettered option above it 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 of sodium chloride, which are to be added to water to make an aqueous solution:

- A** 0.009 g
- B** 0.09 g
- C** 0.9 g
- D** 9.0 g
- E** 90 g

Select, from **A** to **E**, which one of the above quantities of sodium chloride would be required to make:

38(Calc). 600 mL of a 15% w/v solution

39(Calc). 45 mL of a solution which when diluted with an equal volume of water results in a 0.1% solution

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). You are required to make an intravenous infusion with the following formula:

sodium bicarbonate	150 mmol/L
sodium chloride	100 mmol/L
potassium chloride	40 mmol/L

The molecular weights are:

sodium bicarbonate	84
sodium chloride	58.5
potassium chloride	74.5

Which of the following is/are the correct weight(s) for the 3 ingredients to make 1 litre of intravenous infusion:

- 1** sodium bicarbonate 12.6 grams
- 2** sodium chloride 5.85 grams
- 3** potassium chloride 2.98 grams

You may use this space for your rough working.

END OF QUESTIONS

Now go back and check your work