

REGISTRATION EXAMINATION SAMPLE PAPER¹

PART TWO - OPEN BOOK and CALCULATIONS

Spring 2012 (for assessment sittings in 2012)

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. The time allowance for this paper is 75 minutes.
Please note: This is half the number of questions than in the actual registration assessment open book paper, and half the time allowed for the actual paper.
5. You should score one mark for each correct answer; no marks should be deducted for incorrect answers or omissions.
6. The reference sources that may be used in this paper are British National Formulary Number 62 (September 2011 edition) and GPhC *Standards of conduct, ethics and performance* (September 2010).
7. You are not permitted to use a calculator in any part of the examination.
8. If representations of prescriptions are included in questions you may presume that the prescription is genuine and the prescriber's signature is known to you.

¹*All questions in the sample paper have appeared in exam 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 assessment in terms of word count, syllabus coverage and ratio of question types.*

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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 medical practitioner who holds a special licence issued by the Home Secretary?

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. Which one of the following products legally may **not** be sold to a patient with stable angina without a prescription (unless as an emergency supply)?

A glyceryl trinitrate 600 microgram sublingual tablets

B Deponit® '5' patches

C Nitrolingual Pumpspray®

D Monomil XL® 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 25 mL/minute/1.73 m²?

A allopurinol

B simvastatin

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 haemoptysis
 - E severe unexplained sore throat, fever or malaise

9. You are asked to work with a local GP surgery to develop a Practice Formulary, and start by reviewing their current prescribing. You notice that the GPs often prescribe preparations that are considered by the Joint Formulary Committee to be less suitable for prescribing. Which one of the following products falls into this category?
- A co-trimoxazole tablets
 - B treosulfan capsules
 - C interferon alfa injection
 - D inosine pranobex tablets
 - E co-cyprindiol 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 a lowland area in Pakistan (below 2,000 m) 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 is subject to safe custody requirements under the current Misuse of Drugs Regulations, and for which prescriptions must state the total quantity prescribed in words and figures
- 15.** is a Controlled Drug that is subject to safe custody requirements under the current Misuse of Drugs Regulations, but for which prescriptions do **not** need to state the total quantity prescribed in words and figures
- 16.** is a Controlled Drug that that is **not** subject to safe custody requirements under the current Misuse of Drugs Regulations, 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.** In which of the following cases would it be appropriate for you to disclose the information requested, without the consent of the patient(s) concerned?
- 1** you receive a written questionnaire from a local hospital requesting you to supply data on patients for whom you dispense antiepileptic medication for a research project
 - 2** you receive a telephone request from a doctor at the local hospital, asking for the medication history of an unconscious patient who has been admitted to hospital suspected of taking an accidental overdose of their prescribed medication. The patient is seriously ill and the information is required in order to optimise treatment
 - 3** you receive a written request from a senior police officer, asking for the address of a patient who is involved in serious crime

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

- 18.** Regarding the use of corticosteroids during pregnancy, which of the following readily cross(es) the placenta unchanged?
- 1** prednisolone
 - 2** betamethasone
 - 3** dexamethasone
- 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** Pasticely® gluten-free macaroni
 - 3** Barkat® gluten-free biscuits

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

- 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	150 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
- 21.** It is a requirement that all registered pharmacies use written standard operating procedures (SOPs). Which of the following is/are true?
- 1** SOPs are useful tools for training new members of staff
 - 2** an SOP should be available detailing the circumstances in which a member of staff who is not a pharmacist may give advice about medicinal products
 - 3** SOPs should set out clear lines of responsibility for individuals carrying out specified roles

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

- 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
- 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 is allergic to ciprofloxacin you are asked to recommend an alternative antibiotic. Which of the following would it be appropriate for you to recommend?
- 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	

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

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 decrease in the intake of green leafy vegetables can enhance the anticoagulant effect of warfarin

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 28 concerns the following extract from a prescription:

Hypromellose eye drops

Instil one drop into each eye as required

28.

FIRST STATEMENT

You should dispense hypromellose 0.3% eye drops

SECOND STATEMENT

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

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. Mrs J does **not** have metabolic acidosis. On admission her plasma-salicylate concentration is found to be 200 mg/litre.

29.

FIRST STATEMENT

Mrs J should be given intravenous sodium bicarbonate 1.26%

SECOND STATEMENT

Sodium bicarbonate prevents cardiac arrhythmias associated with severe salicylate poisoning

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	

30.

FIRST STATEMENT

Patients using buprenorphine patches should avoid exposing the application site to external heat

SECOND STATEMENT

Exposure of the application site to external heat may increase the absorption of buprenorphine from the patches

Turn over for the designated calculation questions

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 of the three piles. 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 work in a specials manufacturing unit and 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 N is prescribed morphine sulphate 240 mg to be given over 24 hours using a syringe driver. Given that the morphine sulphate solution that is used contains 20 mg/ mL, the infusion rate should be set at:

- A** 0.5 mL/hour
- B** 1 mL/hour
- C** 2 mL/hour
- D** 5 mL/hour
- E** 10 mL/hour

You may use this space for your rough working.

36(Calc). A child weighing 22 kg requires a dose of gentamicin of 6 mg/kg/day in three 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** 1 hour 8 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 from the list above it 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 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