REGISTRATION ASSESSMENT
SAMPLE PAPER

Autumn 2011 (for assessment sittings in 2012)

PART II (OPEN BOOK and CALCULATIONS)

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 assessment 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 62 (September 2011 edition) and GPhC Standards of conduct, ethics and practice September 2010.

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).

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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 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  benzylpenicillin plus clarithromycin
   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  chlorphenamine tablets
D  promethazine hydrochloride 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 to 14 refer to the following options:

A a relatively minor adverse reaction which does not need to be reported to the Medicines and Healthcare products Regulatory Agency (MHRA)

B a relatively minor adverse reaction which should be reported to the MHRA because the medicine is intensively monitored by the MHRA

C a relatively minor adverse reaction caused by an established medicine, which should be reported to the MHRA

D a serious adverse reaction which should be reported to the MHRA

E not an adverse reaction therefore it does not need to be reported to the MHRA
Select, from A to E, which one of the above applies to the following:

11. a woman who develops sinusitis while taking Tarka® capsules
12. a man who develops jaundice while taking pioglitazone
13. a man who experiences a fall in his LDL – cholesterol while taking atorvastatin
14. a woman who develops a headache while taking amlodipine tablets
Questions 15 and 16 concern the following medicines:

A  pholcodine linctus 5 mg/mL
B  erythromycin stearate tablets, BP 250 mg
C  co-danthrusate capsules, BP
D  chloramphenicol ear drops 5%
E  zolmitriptan tablets 2.5 mg

Select, from A to E, which one of the above medicines is subject to the following special conditions/ restrictions on supply?:

15. it will be reimbursed if prescribed on a prescription form FP10D / GP14 (Scotland) / WP10D (Wales)
16. it will be reimbursed if prescribed on an NHS prescription written by a Community Practitioner Nurse Prescriber
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

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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

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19. Pharmacists wishing to be involved in the extemporaneous preparation of products must ensure that they are competent to undertake the task. Which of the following is/are also true?

1. A product should be extemporaneously prepared only when there is no product with a marketing authorisation (the GPhC Council has authorised an exemption to enable the extemporaneous preparation of methadone liquid).

2. Preparation of extemporaneous products must be covered in the pharmacy procedures within the pharmacy as set out in the Medicines (Pharmacies)(Responsible Pharmacist) Regulations 2008.

3. Extemporaneously prepared medicines are unlicensed.

20. When prescribed for the treatment of drug dependence, which of the following controlled drugs may only be prescribed lawfully by doctors who are licensed to do so by the Secretary of State for the Home Office?

1. Buprenorphine

2. Methadone

3. Cocaine

21. Regarding the use of pilocarpine 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.
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:

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**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 0.9% or glucose 5% intravenous infusion are suitable infusion fluids for bumetanide injection

**SECOND STATEMENT**
Bumetanide injection is compatible with both sodium chloride 0.9% and glucose 5%
**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 beclometasone nasal spray

**SECOND STATEMENT**

Corticosteroid nasal sprays are indicated for the treatment of allergic rhinitis
Question 29

**FIRST STATEMENT**
Four drops of Cipramil® oral drops is approximately equivalent in therapeutic effect to one 20 mg Cipramil tablet

**SECOND STATEMENT**
Cipramil® oral drops contain citalopram hydrochloride 40 mg/mL

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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
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.
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.
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
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.
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.
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?

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 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:

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

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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